U.S. GENERAL SERVICES ADMINISTRATION
NATIONAL CAPITAL REGION

GSA

West Heating Plant Disposal

FINAL ENVIRONMENTAL ASSESSMENT/ SECTION 106 REVIEW

December 2012

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Final
Environmental Assessment
West Heating Plant Disposal
Washington, DC
December 2012

U.S. General Services Administration
Public Buildings Service, National Capital Region
301 7th Street, SW
Washington, DC 20407

Abstract

The United States (U.S.) General Services Administration (GSA), National Capital Region, has prepared this Environmental Assessment (EA) for the proposed disposal of the West Heating Plant parcel (approximately 2.08 acres), located in the west Georgetown area of Washington, District of Columbia (DC or District). The parcel contains a decommissioned heating plant that was previously used to produce steam to heat Federal buildings in the District, as well as associated infrastructure. While the proposed action is the disposal of the property, this EA also analyzes the indirect impacts from a reasonably foreseeable development scenario on the parcel once GSA disposes of the property. For the purposes of impacts analysis in the EA, it is assumed that any redevelopment would be consistent with surrounding land use zoning, W-2 Waterfront District, Medium Density (Mixed Use).

The EA has been prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended; Council on Environmental Quality (CEQ) regulations implementing NEPA; and the GSA *Public Buildings Service NEPA Desk Guide*. This EA contains an analysis of potential environmental impacts for the No-Action Alternative and the Disposal Alternative.

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List of Acronyms

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing materials
ADA	Americans with Disabilities Act
amsl	Above mean sea level
APE	area of potential effect
B&O	Baltimore and Ohio
BC	Before Christ
Bgs	Below Ground Surface
C&O	Chesapeake and Ohio
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
dBA	A-weighted Decibel
DC	District of Columbia
DCOP	District of Columbia Office of Planning
DC SHPO	District of Columbia State Historic Preservation Office/Officer
DDOE	District Department of the Environment
DDOT	District Department of Transportation
DOE	Determination of Eligibility
DRO	Diesel Range Organics
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
F to F	Floor-to-Floor
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, Rodenticide Act
FONSI	Finding of No Significant Impact
GRO	Gasoline Range Organics
GSA	General Services Administration
GSF	Gross square footage
HCM	Highway Capacity Manual
HD	Historic District
HOTD	Heating, Operating, and Transmission District
ITE	Institute of Transportation Engineers
LOS	Level of Service
LTR	Left/Thru/Right
µg/kg	Micrograms per Kilogram
Mgal/d	Million Gallons per Day
Mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MOA	Memorandum of Agreement
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act

NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NW	Northwest
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Act
PBA	Public Buildings Administration
PBC	Public Benefit Conveyance
PBS	Public Buildings Services
PCBs	Polychlorinated Biphenyls
PUD	Planned Unit Development
RBC	Risk Based Criteria
RCRA	Resource Conservation and Recovery Act
RFDS	Reasonably Foreseeable Development Scenario
SF	Square Feet
SPCC	Spill Prevention Control and Countermeasures
SWDA	Solid Waste Disposal Act
TCLP	Toxicity Characteristic Leaching Procedure
TDM	Travel Demand Management
TMDL	Total Maximum Daily Load
TMP	Transportation Management Plan
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
U.S.	United States
U.S.C.	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
WMATA	Washington Metropolitan Area Transit Authority

1. PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1. INTRODUCTION

The United States (U.S.) General Services Administration (GSA) has prepared this Final Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the proposed disposal of the West Heating Plant parcel, located at 29th and K Street, Northwest (NW), Washington, District of Columbia (DC, or District).

This EA is consistent with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508 (1986)), and GSA's *Public Buildings Service* (*PBS) NEPA Desk Guide*. NEPA requires Federal agencies to prepare an EA to determine if a proposed action has the potential to significantly affect the natural and human environment. Primary issues addressed in this EA include impacts to transportation, water resources, historic and visual resources, noise, hazardous materials and waste, and public health and safety.

Concurrent with the preparation of the EA, GSA has consulted with the DC State Historic Preservation Office (DC SHPO) under Section 106 of the National Historic Preservation Act (NHPA), 16 United States Code (U.S.C.) 470f, to identify historic properties that may be potentially affected by the disposal of the West Heating Plant parcel and to resolve any adverse effects of the disposal that may be identified through consultation. GSA has determined that the West Heating Plant is eligible for listing in the National Register of Historic Places (NRHP), and the property is located in the Georgetown Historic District, a National Historic Landmark.

Agencies and members of the public are encouraged to provide written comments on the Final EA and Finding of No Significant Impact (FONSI) during the 30-day review period.

Please send written comments on the Final EA and FONSI to:

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1.2 WHAT IS GSA PROPOSING?

The proposed action is for GSA to dispose of approximately 2.08 acres of land, referred to as the West Heating Plant parcel. The property is located at 29th and K Street, NW, Washington, DC (see Figure 1-1). The parcel currently contains a decommissioned heating plant that was previously used to provide steam to Federal buildings in the District of Columbia. The West Heating Plant parcel has been identified as excess and the disposal of the parcel is needed to eliminate the costs associated with maintenance of the property.

The Proposed Action

GSA proposes to dispose of the West Heating Plant parcel, located at 29th and K Street, NW, Washington, DC.

The property is no longer needed and is considered excess.

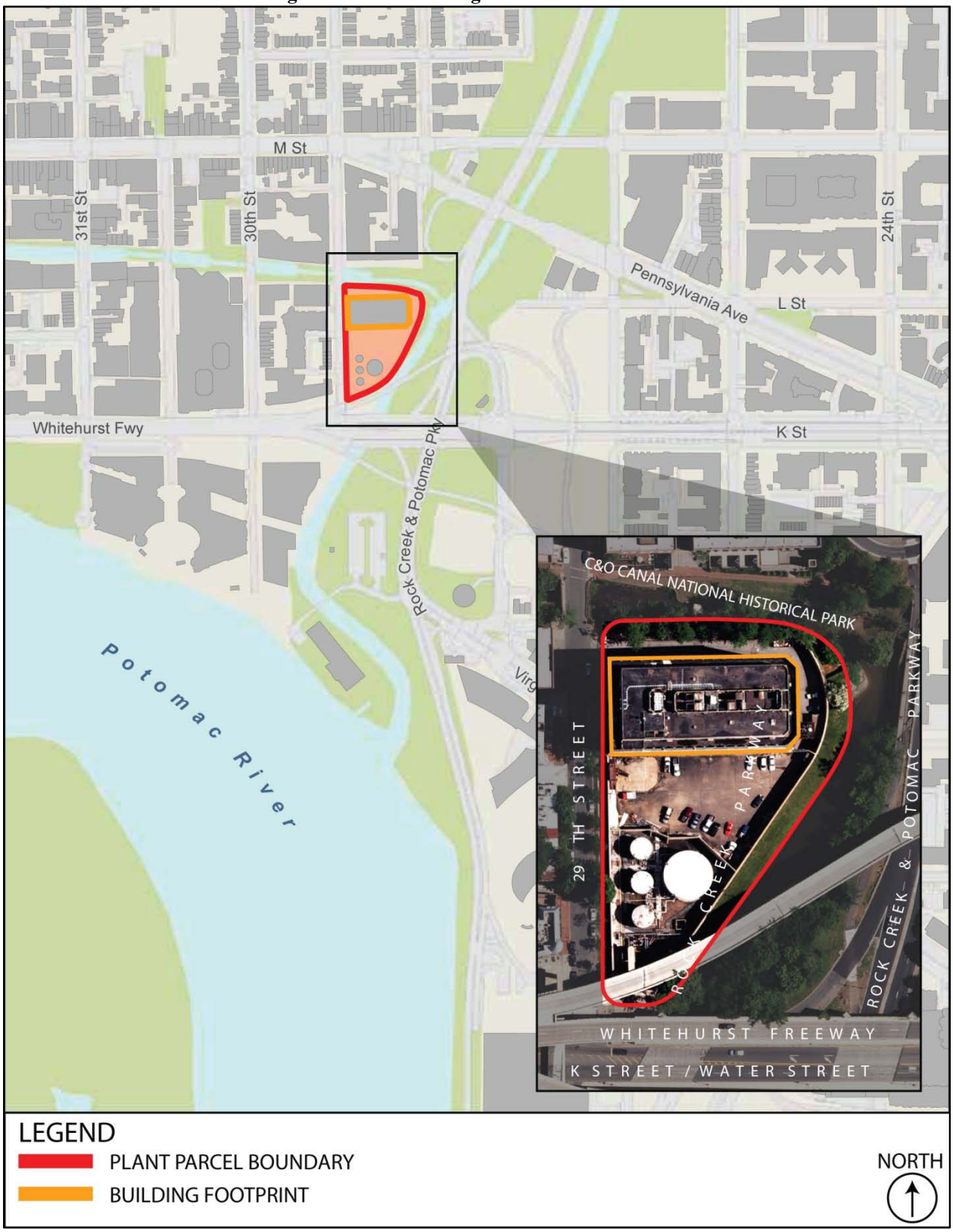
GSA has prepared this EA in accordance with Section 102 of the National Environmental Policy Act (NEPA), CEQ regulations implementing NEPA (40 CFR Parts 1500-1508 (1986)), and GSA's *Public Buildings Service* (*PBS) NEPA Desk Guide*. NEPA requires Federal agencies to evaluate the potential impacts that the proposed action may have on the human and natural environment.

Disposal of the parcel by GSA would remove the property from Federal ownership and the land would become subject to the District of Columbia's land use and taxing authority. All future development or reuse would be subject to local zoning, permitting, and land use controls (see Section 1.6.3).

Per CEQ regulations, Federal agencies are required to evaluate both direct and indirect impacts of a proposed action. To fully evaluate the potential indirect impacts of the proposed disposal action, the EA contains an analysis of impacts that may result from a reasonable future use of the property (see Chapter 3 for additional details). The scenario described in Chapter 3 represents the highest level of buildout that could reasonably occur given constraints to development on the site (for example, the scenario assumes the largest and tallest buildings, and the highest densities, etc.). GSA obtained input from the DC Office of Planning (DCOP) and District Department of Transportation (DDOT) on the reasonably foreseeable development scenario to ensure the scenario accounts for the highest level of adverse impacts that could occur, for the purpose of analysis in this EA.

Evaluation of the impacts from a reasonable future use of the property does not imply that GSA would restrict future use of the property, or that GSA prescribes a specific development outcome, should it leave Federal ownership. Additionally, the proposed disposal would not include the control of any reuse of the property other than potential deed restrictions as are authorized by statute for the protection of human health, the environment, and historic resources (see Appendix F for notices and covenants).

Figure 1-1 West Heating Plant Parcel Location.



1.3 WHAT IS THE PURPOSE OF THE PROPOSED ACTION?

The purpose of the proposed action is the disposal of the West Heating Plant parcel and its removal from Federal ownership.

1.4 WHAT IS THE NEED FOR THE PROPOSED ACTION?

The need for the proposed action is to eliminate the costs associated with the maintenance of a property that has been identified as excess. This proposed action is consistent with the June 20, 2010 Presidential Memorandum (Presidential Memorandum – Disposing of Unneeded Federal Real Estate) that calls for Federal agencies to identify and dispose of excess properties.

1.5 WHAT IS THE PROJECT BACKGROUND?

The following sections provide a brief overview of the project site history, what currently exists on the site, and how the Federal land disposal process occurs.

1.5.1 What is the History of the Site?

The West Heating Plant site is recorded in the land records of the District as Square 1193. In the eighteenth century the area was patented as a property named "Philadelphia" and lay just outside the limits of Georgetown, Maryland. Incorporated first into Georgetown and then into the District, Square 1193 was bounded by Needwood Street on the north, Water (K) Street on the south, Greene (29th) Street on the west, and Rock Creek on the east. As the Rock Creek boundary stretches from the northeast to the southwest, the "square" has the shape of an inverted triangle. Development of the parcel began shortly after construction of the Chesapeake and Ohio (C&O) Canal through Georgetown in 1831. Completion of the canal through Georgetown spawned development of small-scale industries that were closely linked to the canal. A few of these household-level industries survived into the twentieth century, but the 1889 flood dealt a major blow to the local economy, ruining not only the C&O Canal but also many of the industries that depended on it. One of the notable industries that developed on Square 1193 was a lime works, established in 1883. The lime works was part of a cluster of lime manufactories that operated in the lower Rock Creek valley during the late nineteenth century, dependent upon raw material arriving in Georgetown via the C&O Canal. Later, during the early decades of the twentieth century, much of the property was used as a dumping ground.

Following the establishment of Rock Creek Park in 1889, plans were developed for a parkway that would connect the park to the downtown area. Although the eventual decision was to leave the lower reaches of Rock Creek as a natural outflow to the Potomac River, certain features of an earlier, less naturalistic scheme were constructed such as a 12-foot sewer that extends from the canal across Square 1193. The C&O Canal, itself abandoned in 1924 after damage by numerous floods, was acquired by the Baltimore and Ohio (B&O) Railroad and then traded to the U.S. Government in return for loan support in 1938.

By 1945 the U.S. Government had obtained ownership of all of the land on Square 1193 in order to construct a new heating plant by purchasing the remaining 0.65-acre portion still owned by the B&O Railroad. Nonetheless, an intra-governmental jurisdictional issue had to be resolved first. Approximately 1.43 acres of the parcel from the original B&O acquisition was under the control of the Department of the Interior and had to be transferred to the Federal Works Agency, predecessor of GSA, so that the plant could be built. However, the National Capital Park and Planning Commission, predecessor of the National Capital Planning Commission (NCPC), insisted that the receiving agency plant and maintain landscaping in the areas outside the stone wall and adjacent to Rock Creek and the canal. An exchange of letters back and forth throughout 1941 between Federal Works Agency Administrator John Carmody and Interior Secretary Harold Ickes finally found a way around an impasse on funding. The transfer of jurisdiction was executed by an Interior Department letter on July 23, 1941, but the action was not recorded in the Land Records of the National Park Service (NPS) until 1964.

The Square 1193 site was seen as advantageous for the new heating plant because it was close to new government buildings as well as the B&O Railroad tracks, which brought coal to a B&O freight terminal and coal yard located on the adjacent block across K Street. The cornerstone was laid for the West Heating Plant in 1946, and it was completed in 1948 at an approximate cost of $7.8 million. The plant was designed to provide steam to existing and future government buildings and to relieve the over-taxed Central Heating Plant at 13th and C Street, SW. The complex consisted of the main building, which housed the boilers and adjunct mechanical equipment, a coal-receiving and ash processing building, a coal yard or stockpile area, and pipes for steam distribution. The six-story heating plant building was built along the northern portion of Square 1193 while a coal yard was located along the south side of the building. Oil tanks and a gas yard currently stand on the south portion of the square.

One of the ramps built in anticipation of an interstate leg through the District that was never built cuts across the southern end of Square 1193. Although this ramp was dismantled as part of a scaled-down Whitehurst Freeway, the base of the pylon that supported that ramp still exists on the West Heating Plant property. The District controls the air rights for the Whitehurst Freeway and a small parcel at the southern end of the property.

The West Heating Plant was constructed in 1948 to provide steam service to government buildings on the west side of the city. The plant ceased steam generation activities in 2000, and since then the site has served as a backup steam location; the site of backup fuel oil storage capacity for the Central Heating Plant; and as office and maintenance shop space for Heating, Operating, and Transmission District (HOTD) personnel.

1.5.2 What Is Currently on the Site?

The West Heating Plant parcel has a land area of 2.08 acres, or 90,605 square feet (SF). As a Federal property, the West Heating Plant property is unzoned. The parcel contains a tall perimeter wall (approximately 10 feet in height) surrounding the property. The east side is bordered by Rock Creek, and the north side is bordered by the C&O Canal. The northern edge of the site consists of the canal wall, which will remain under the ownership of the National Park

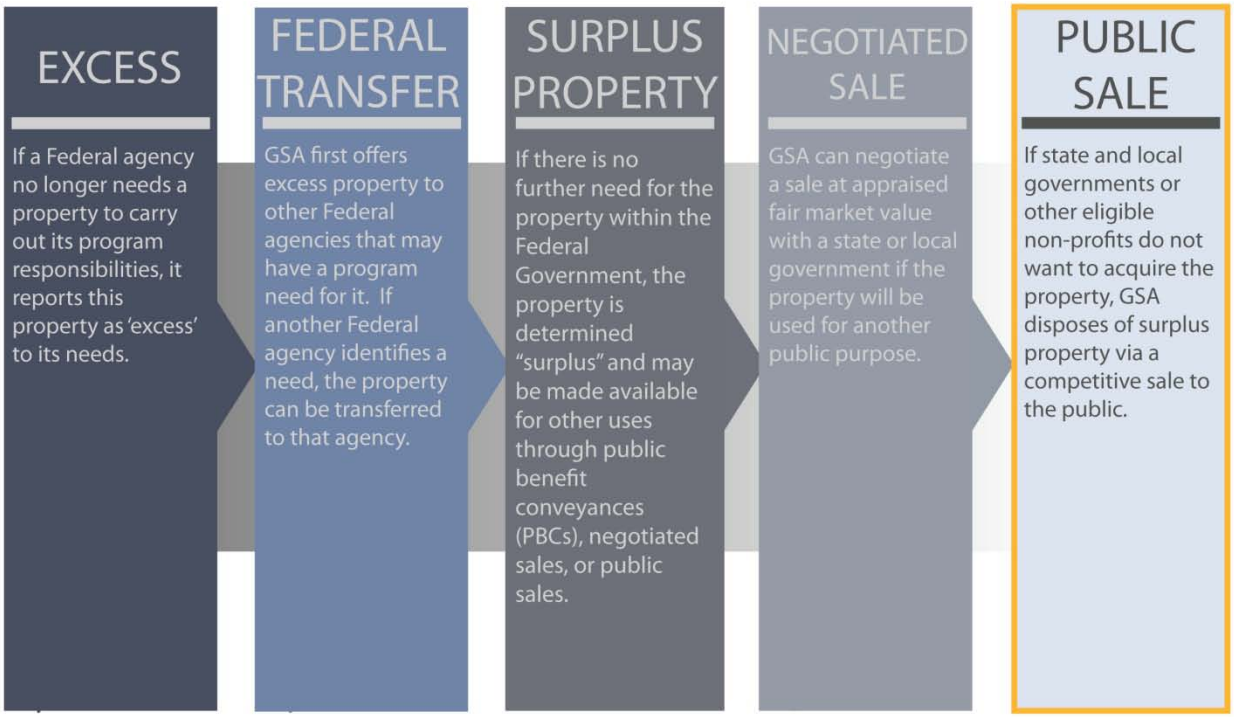
Service (NPS) and there is a bulkhead/retaining wall with a stone veneer wall, approximately 10 feet above mean sea level (amsl), along Rock Creek. The area east of the tall perimeter wall contains a landscaped grassy area between the wall and adjacent Rock Creek. The area inside the tall perimeter wall contains the heating plant building, which is no longer in operation, as well as supporting assets including above ground storage tanks, a paved area previously used for parking, and other infrastructure. Underground steam tunnels exist adjacent to the West Heating Plant site, but the tunnels would not be part of the proposed disposal (the developer would be responsible for sealing and capping the tunnels). The heating plant building itself is 21,836 gross square feet (GSF) and 110 feet above-grade. A mechanical structure situated on the rooftop adds an additional 10 feet for a total of 120 feet above-grade.

1.5.3 What is the Disposal Process?

Once a Federal agency determines a property to be excess, the property must first be offered to other Federal agencies that may have a need for it. If there is no further need for the property within the Federal government, it is considered surplus property. The property is next evaluated by the Department of Housing and Urban Development to determine if it is suitable for homeless use, as required under the McKinney-Vento Act. If it is deemed unsuitable, it may be screened for potential Public Benefit Conveyances (PBCs) or negotiated sale to a local municipality. Examples of a PBC include public health or educational uses, public recreational areas, or wildlife conservation, among others. If it is deemed suitable, it is screened in accordance with the McKinney-Vento Act. If there is no homeless interest or no successful homeless or other PBC/Negotiated sale application for the property, the property can proceed to public sale. This process is depicted graphically in Figure 1-2.

GSA followed the appropriate requirements for the disposal process and determined that there are no other interested parties or uses for the West Heating Plant parcel. During the Federal screening process with Federal agencies, GSA consulted with other Federal agencies to assess whether the agencies had an interest in the property or portions thereof. Subsequent to Federal agency screening, the District of Columbia government was informed that the property had been determined surplus to the Federal government, and the District did not express interest in the property. GSA has also cleared the requirements of the McKinney-Vento Act effective May 9, 2012; therefore, public sale of the property is the appropriate course of action.

Figure 1-2 Disposal Process.



1.6 What are the Relevant Environmental Laws and Regulations?

1.6.1 What Is NEPA and the NEPA process?

NEPA is legislation that establishes nationwide environmental policies to ensure protection of the environment. This legislation was passed by Congress in 1969 and took effect on January 1, 1970. It requires Federal agencies to consider the impacts of their projects on the human and natural environment during the Federal agency planning and decision-making process. An EA is a concise public document that provides sufficient analysis to determine the level of impacts the proposed action would have on the human and natural environment, and whether those impacts are significant, resulting in the preparation of an Environmental Impact Statement (EIS), or not significant, resulting in the preparation of a Finding of No Significant Impact (FONSI).

NEPA requires agencies to make a thorough effort to inform and involve interested members of the public before reaching a project decision. Title 40 CFR Part 1500.1(b) states, "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." By involving citizens, stakeholder groups, and agencies, the Federal government can make a better informed decision.

Public Involvement

Throughout the NEPA process, the public has had and will continue to have opportunities to comment on the proposed action. Public scoping was conducted before the Draft EA was prepared to identify and refine the resource topics that should be included in the EA. Scoping allows the public to help define priorities and express stakeholder and community issues to the agency conducting the proposed action. The scoping period for this EA was from January 13, 2012, to February 13, 2012, and a public scoping meeting was held on January 26, 2012. Scoping letters were sent to interested stakeholders two weeks prior to the scoping meeting (see Chapter 6 of this EA). Key issues identified during scoping included:

- Future development/use of the parcel
- Hazardous materials and waste
- Traffic/transportation impacts
- Historic resources and visual impacts
- Real estate history of the parcel (previous ownership)
- Noise impacts

NEPA Public Involvement Process

Scoping

January 13, 2012 to February 13, 2012

Public Review of Draft EA

July 30, 2012 to August 29, 2012 (30-day review)

Publication of Final EA and FONSI; Public Review (30-days)

Fall/Winter 2012

Chapter 6 contains the distribution list for public scoping and notification. The public was invited to comment on the Draft EA during a 30-day comment period (July 30, 2012 to August 29, 2012). Chapter 7 of this EA contains the comments received on the Draft EA, and the responses to those comments.

The public is encouraged to comment on the Final EA and FONSI, during a 30-day review period.

Agency Consultation

GSA has coordinated with and will continue to coordinate with several agencies throughout the NEPA process to fulfill regulatory requirements. Due to the built environment of the West Heating Plant parcel, there are little to no wildlife species on the site. In a letter dated August 3, 2011, the U.S. Fish and Wildlife Service stated that there are no Federally listed threatened and endangered species in the project vicinity, and that further consultation was not required (see Appendix A). Due to the limited natural vegetation on the parcel, the site does not likely support any state-listed or other rare species; therefore, further coordination with the U.S. Fish and Wildlife Service is not needed.

Under the NHPA, GSA consulted with the DC SHPO to identify the area of potential effect (APE) for the proposed disposal action. Additional consultation occurred between GSA and the

DC SHPO after the Draft EA was completed to ensure that the DC SHPO had an opportunity to comment on any identified effects of the proposed disposal.

GSA has also coordinated with other agencies and interested parties in the District of Columbia, such as the DCOP, DDOT, District Department of the Environment (DDOE), as well as citizen groups such as the Citizens Association of Georgetown, and Friends of Georgetown Waterfront Park. In addition to the public scoping meetings and agency coordination meetings that have occurred throughout the NEPA process, GSA held an additional meeting on October 4, 2012. The purpose of this meeting, held with officials from the DCOP and the DC SHPO, was to consult with self-identified consulting parties on the anticipated outcome of the Section 106 process, to ensure clarity on GSA's authority and process for disposal, and to reiterate the local land use processes to be undertaken by the District of Columbia after GSA has disposed of the property.

1.6.2 What is Section 106 of the National Historic Preservation Act?

Similar to NEPA, the NHPA of 1966, as amended through 2004, requires Federal agencies to consider the potential effects of their actions on historic resources including historic buildings, districts, structures, and objects that have significant scientific, historic, or cultural value. NHPA establishes that it is the Federal agencies' clear responsibility to protect and preserve any historic and prehistoric resources.

Section 106 of the NHPA, 16 U.S.C. 470 et seq., requires Federal agencies to take into account the effects of their proposed actions on these and any properties that are listed or eligible for the NRHP. Section 106 also requires, as part of the historic review process, consultation with local and Federal agencies responsible for historic preservation as well any local citizen groups interested in historic preservation. As part of GSA's Section 106 consultation, and in addition to the October 4, 2012 meeting, the agency presented a proposed APE for comment at the scoping meeting, referred during the scoping and public meetings as well as in the draft EA to protective historic preservation covenants to be placed on the property to ensure preservation of the heating plant's historic character, and described the subsequent District of Columbia land use and historic preservation reviews that would occur post-disposal.

1.6.3 What Other Environmental Laws and Regulations are Relevant to this Project?

In addition to NEPA and NHPA, GSA must also comply with many other statutes, regulations, and Executive Orders, as indicated in the examples below. The following list is not intended to be exhaustive; rather, the intent is to illustrate the primary regulatory guidelines to which GSA must adhere. GSA incorporates compliance with these laws and regulations into its project planning and NEPA compliance.

Regulations

- CEQ Regulations (40 CFR Parts 1500-1508)
- 36 CFR Part 800 – Protection of Historic Properties
- 32 CFR Part 229 – Protection of Archeological Resources: Uniform Regulations

- 33 CFR Parts 320-330 – U.S. Army Corps of Engineers Regulations
- 40 CFR Parts 300-399 – Hazardous Substance Regulations
- Secretary of the Interior Standards and Guidelines for Archeology and Historic Preservation

Executive Orders

- Executive Order 11593 – Protection and Enhancement of the Cultural Environment
- Executive Order 11990 – Protection of Wetlands
- Executive Order 11988 – Floodplain Management
- Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13045 – Protection of Children from Environmental Health Risks and Safety Risks
- Executive Order 13327 – Federal Real Property Asset Management
- Executive Order 13423 – Strengthening Federal Environmental, Energy, and Transportation Management
- Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance

Statutes

- Clean Air Act of 1970 as amended
- Clean Water Act of 1977 as amended
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980
- Solid Waste Disposal Act (SWDA) of 1965
- Resource Conservation and Recovery Act (RCRA) of 1976
- Toxic Substances Control Act (TSCA) of 1976
- Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) of 1972, amended
- Occupational Safety and Health Act (OSHA) of 1971
- Archeological Resources Protection Act of 1979
- Endangered Species Act of 1973
- Coastal Zone Management Act of 1970

Local Zoning, Permitting, and Land Use Controls

Any future redevelopment on the site would be subject to local zoning, permitting, and land use controls that would regulate the type of development that could occur and these restrictions would ensure that any new development or reuse is consistent with the character of the surrounding area. For example, any future redevelopment or reuse would be subject to DC zoning controls, and a developer would be required to comply with the zoning process. The developer would be required to coordinate with DCOP staff as well as the DC Zoning Commission to zone the site so that it is not inconsistent with the DC Comprehensive Plan. Because the site is located in the Georgetown Historic District and is adjacent to Rock Creek

Park, reviews from the Old Georgetown Board and the U.S. Commission of Fine Arts would be required for any proposed modifications to the site (DCOP, 2012b).

In addition, the DCOP may require the site to be developed as a Planned Unit Development (PUD). As defined by the DC municipal regulations (Title 11 Rule 24; D.C. Municipal Regulations and D.C. Register [DCODAI, 2001]), a PUD is a special multi-purpose project that permits "flexibility of development and other incentives, such as increased building height and density; provided, that the project offers a commendable number or quality of public benefits and that it protects and advances the public health, safety, welfare, and convenience" in a manner consistent with the DC Comprehensive Plan. When a project is designated as a PUD, the DC Zoning Commission usually mandates the development of standards specifically tailored to the project (DCOZ, 2012). The PUD would incorporate additional levels of review and public involvement, including a comprehensive review by the DC Zoning Commission in order to evaluate the public benefits offered and to establish a basis for long-term public control over the property (Rule 11-2400.2; DC Municipal Regulations and DC Register 2001 [DCODAI, 2001]). Reviews from other agencies may also be required, including DDOE for the removal of hazardous wastes (see Section 3.10) and identifying appropriate erosion control practices during construction (see Section 3.6), as well as the U.S. Army Corps of Engineers for any maintenance or modifications to the existing riparian buffer (see Section 3.6). These and other levels of reviews for permitting and zoning would ensure that any future development is not unrestricted and is consistent with applicable Federal regulations and local zoning, permitting, and land use controls.

1.7 WHAT RESOURCE TOPICS WERE DISMISSED FROM FURTHER STUDY IN THIS EA?

Several topics were considered in the preparation of this EA but dismissed from detailed study because the proposed action would result in negligible impacts or no impact to these resources. The resource topics considered were also refined during the public scoping process for this EA, and the EA focuses on those resource topics that are of greatest interest to the public or have potential for environmental impacts.

The following resources have been dismissed from further analysis in the EA because the proposed action would result in negligible or no impact to these resources:

- Air Quality
- Coastal Zone Management
- Cultural Resources – Archeology
- Environmental Justice
- Infrastructure/Utilities
- Land Use and Zoning
- Community Facilities
- Population, Housing, Income, Employment, and Education
- Topography, Geology, and Soils
- Vegetation, Wetlands, and Wildlife

1.7.1 Air Quality

Disposal of the West Heating Plant parcel would not affect air quality; however, there could be minor, indirect impacts from future redevelopment of the parcel after the proposed action is complete. These impacts could result from construction emissions and mobile sources from increased vehicular traffic. Construction emissions would be short-term and minor, and additional vehicular traffic emissions would be long-term and minor. As shown in the Traffic Study conducted for this EA (see Appendix C), there would be a negligible increase in traffic resulting from a reasonably foreseeable development scenario after disposal. Air quality is regulated by the Clean Air Act, and any indirect impacts resulting from redevelopment of the site would be expected to conform to Clean Air Act requirements as stipulated by the State Implementation Plan for the Washington, DC region. Because the impacts would be minor, there would not be an overall change to air quality in the region. Therefore, air quality was dismissed from further analysis in the EA.

1.7.2 Coastal Zone Management

The District of Columbia does not have a designated coastal zone and is exempt from the conditions of the Coastal Zone Management Act, including the development of a Coastal Zone Management Plan. Therefore, this resource topic was dismissed from further analysis in the EA.

1.7.3 Cultural Resources – Archeology

Disposal of the West Heating Plant parcel would not affect archeological resources, nor would there be any indirect impacts associated with redevelopment of the site after disposal has occurred. In conjunction with this EA, a cultural resource survey (LeeDecker and Kuhn, 2012) has been completed for the West Heating Plant property. One goal of this study was to assess the archeological potential of the site, based primarily on archival research. A geoarcheological study was used to assess the subsurface condition of the property with specific attention to the

preservation of buried landscapes that might contain archeological resources. This study concluded that the property might have contained archeological resources associated with three broad themes identified in the city's comprehensive plan for historic preservation: Native American Cultures (circa 10,000 Before Christ [BC] to 1730), Canal Commerce in Georgetown and Washington (1828-1889), and Service Industries (1800-1945).

It is likely that Native American groups settled along Rock Creek, as evidenced by previous documentation of some of the most important sites in the entire city at the Whitehurst Freeway on the east side of Rock Creek. The west bank of Rock Creek, including Square 1193, would also likely have been used by prehistoric groups. However, it is likely that any archeological remains of prehistoric use of Square 1193 would have lost integrity as a result of urban development, beginning with construction of the C&O Canal and culminating with construction of the West Heating Plant. The natural environment along lower Rock Creek would have presented an attractive suite of resources for prehistoric populations, but the cumulative impacts of the site's industrial development would have obliterated the landscape to such an extent that prehistoric archeological remains would have no physical integrity.

Resources associated with the Canal Commerce in Georgetown and Washington context (1828-1889) would include the John Moore dry dock and the Cartwright & Johnston Lime Works (and its successors). Because of their association with the C&O Canal, both could be considered important because of historically significant events, as the C&O Canal was of major importance for the economy of Georgetown and the City of Washington and is listed in the NRHP. The inlet to the dry dock survives within the C&O Canal property, and this feature is listed as a contributing resource to the C&O Canal Historic District. The dry dock would have included a channel, probably clay-lined, a set of piers, and a set of outlet gates to control the flow of water. Within the West Heating Plant property, however, physical remains of the dry dock have likely been severely disturbed by construction of the heating plant and possibly by earlier construction of a large sewer across the property. The kilns associated with the lime works would have required fairly substantial masonry construction, but these structures, located in the West Heating Plant coal yard area, were almost certainly destroyed during construction of the heating plant, if not by the sewer.

Potential resources associated with the Service Industries context (1800-1945) include a series of service industries (stable, blacksmith, wheelwright shop, etc.) that were located at the south end of the West Heating Plant property. These resources would be expressed in the archeological record by architectural features, activity areas, industrial by-products and waste (slag, ash, wood shavings, etc.), or possibly by discarded tools used in the various trades. To the extent that well-preserved features and deposits are present, they could provide information pertinent to the development of industrial technology prior to the transition from small-scale household-level production to large-scale, mechanized factory production. However, as these resources were often housed in relatively modest structures, their archeological footprint would have been relatively ephemeral and most likely obliterated by construction of the sewer or the heating plant. The cultural resource survey found that, although the West Heating Plant property may contain some physical remains of Georgetown's nineteenth-century industries, it is not expected that these resources would retain sufficient integrity or information potential to warrant archeological documentation.

This study concludes that there is little, if any, likelihood that NRHP-eligible archeological resources are present in the study area, so there is no need for further work prior to disposal of the West Heating Plant property from Federal ownership (see Appendix D). Therefore, this resource was dismissed from further analysis in the EA.

1.7.4 Environmental Justice

Disposal of the West Heating Plant parcel would not result in any environmental justice impacts. There would not be any adverse, indirect impacts from subsequent redevelopment of the site after disposal has occurred. The parcel exists in an area of Georgetown where there would not be any environmental justice concerns. Any new redevelopment would be expected to be consistent with surrounding land uses. While GSA cannot dictate the District's future course of action, it is anticipated that the future owner of the property would be required to submit any new development plans through a review and approval process with District agencies for any proposed changes to land use or zoning (see additional discussion under Section 1.7.6, Land Use and Zoning). No disproportionately high and adverse effects on any minority or low-income populations would occur as a result of the proposed action per Executive Order 12898 regarding environmental justice. There would also not be any disproportionately high and adverse effects on children, per Executive Order 13045. Therefore, this resource was dismissed from further analysis in the EA.

1.7.5 Infrastructure / Utilities

Infrastructure exists on the West Heating Plant parcel, including stormwater conveyance, electricity and telecommunications, underground steam tunnels, and wastewater; however, the majority of existing infrastructure that served the Plant itself is no longer operational. Notable features include a large sewer pipe present below the West Heating Plant site (reported to be 12 feet in diameter), and above ground natural gas lines that exist at the southern end of the site. Disposal of the West Heating Plant parcel would not affect existing infrastructure on the site. Future redevelopment of the site, however, could result in minor indirect impacts to infrastructure if upgrades or additional demand/capacity is required, or if the developer inadvertently causes damage to any of the systems that are operational. The developer would need to account for the presence of any existing utilities or infrastructure systems on the site in future development plans, as well as any associated utility easements. Existing underground steam tunnels adjacent to the site would be sealed and capped and would be the responsibility of the developer to seal and cap them. Any needed upgrades or modifications to the existing infrastructure would be coordinated by the developer through the appropriate utility provider in the District to acquire new utility connections, to ensure that adequate capacities exist for new demands, or to coordinate acquiring any new capacity or modifications that may be needed. Therefore, this resource was dismissed from further analysis in the EA.

1.7.6 Land Use and Zoning

There is currently no land use designation assigned to the West Heating Plant parcel by the District because it is a Federal property; however, all non-Federal land adjacent to the parcel is

zoned W-2, Waterfront District, Medium Density (Mixed Use). The parcel is also adjacent to two units of the national park system: the C&O Canal National Historical Park and Rock Creek. The C&O Canal National Historical Park runs approximately 184.5 miles along the north side of the Potomac River starting in Georgetown and ending in Cumberland, Maryland. The canal borders the north side of the West Heating Plant parcel. Rock Creek separates the property from Rock Creek Park and the Rock Creek and Potomac parkway, but the property, including the perimeter wall and the West Heating Plant structure, is visible from both park units.

Disposal of the West Heating Plant parcel would not affect existing land use or zoning. After disposal has occurred, it is assumed that any new development would be consistent with land use of the surrounding area, and would also be consistent with District development controls. While GSA cannot dictate the District's future course of action, it is anticipated that the future owner of the property would be required to zone the property and submit new development plans through a review and approval process with District agencies. The zoning regulations in Washington, DC are established and enforced by the District Office of Zoning, the DC Zoning Commission, and the Board of Zoning Adjustment. Once the property is no longer under Federal ownership, the developer would be required to adhere to District planning and zoning regulations, and obtain approval from the DCOP, the DC Zoning Commission, and the Board of Zoning Adjustment prior to any new development on the site. Any future development on the site, after the disposal process is complete, would be subject to District regulations and agency approvals. This process would negate or minimize any potential impacts to land use and zoning, as well as impacts to adjacent parkland.

Further, disposal and conversion of the site from industrial use to any other use would constitute a benefit to adjacent parkland. Connectivity with the adjacent parkland would not worsen under the proposed action, and may be improved, depending on the development plans for the site. The site would be subject to historic preservation controls, including the covenant related to Section 106 compliance, and the District may require that the property be developed as a PUD, which could result in additional public amenities and open space, creating potential benefits for adjacent parkland. The NPS holds a seat on the District's Zoning Commission, and therefore would have a role in determining the impacts the development of the property would have on the adjacent parkland. Finally, impacts to adjacent national park units would be primarily visual or would be related to the historic resources in these parks and both types of impacts are analyzed in Chapter 3. Therefore, land use and zoning was dismissed from further analysis in the EA.

1.7.7 Community Facilities

The proposed disposal of the West Heating Plant parcel would not affect community facilities. Potential indirect impacts from future redevelopment of the site after disposal would be negligible or non-existent. There are no existing community facilities on the parcel. Any new development that would occur after disposal is complete would be subject to District planning and zoning regulations and agency approval, as described under Section 1.7.6, Land Use and Zoning. There could be minor impacts to emergency responders (police, fire, and rescue) because any new development would place additional demand on these resources. Impacts would be indirect and would be coordinated by the District to ensure response times would not

be affected. The green buffers at the north and east perimeters of the West Heating Plant property are part of the setting of the C&O Canal and Rock Creek and Potomac Parkway as historic properties, but they do not constitute public parkland; thus, they are not community facilities. Therefore, this resource was dismissed from further analysis in the EA.

1.7.8 Population, Housing, Income, Employment, and Education

The West Heating Plant has no permanent residential population or housing; therefore, the disposal action would have no impact on them. Any increased housing availability would be an indirect impact and given the highly urbanized nature of the area and numerous housing opportunities available, any impacts would be negligible. In addition, the proposed disposal would not require the relocation of any housing or employment opportunities and as a result would not have detectable impacts to education or other services in the area.

The disposal of the West Heating Plant would not directly impact employment opportunities and income levels in the area. However, indirect impacts resulting from future redevelopment of the site may cause slight, but detectable increases in employment opportunities in the area. Given the highly urbanized area with numerous employment opportunities and the scale of these potential increases, potential impacts would be negligible. Therefore, this resource was dismissed from further analysis in the EA.

1.7.9 Topography, Geology, and Soils

There would be no impacts from disposal of the West Heating Plant parcel on topography, geology, or soils. There are no unique geological features underlying the project area, and the building and site were not damaged during the 2011 Virginia earthquake (GSA, personal communication, 2012b). There could be minor, indirect impacts from redevelopment of the site after GSA has disposed of the property, including any grading or new fill that might be needed to support the new construction, which would be conducted by the developer. The topography of the site is already level and would most likely remain level to support any future construction by the new owner. The developer may be required to implement best management practices during construction to minimize impacts to soils from potential runoff, such as utilizing silt fences. However, despite these minor impacts, there would not be an overall change to the topography, geology, or soil types within the project area. Therefore, this resource topic was dismissed from further analysis in the EA.

1.7.10 Vegetation

The West Heating Plant parcel is almost entirely developed and contains very little vegetation except for a small area around the perimeter of the parcel outside of the tall perimeter wall. Disposal of the West Heating Plant parcel would not affect vegetation; however, there could be indirect impacts due to redevelopment of the site after GSA has disposed of the property. As described in greater detail in Chapter 3 of this EA, the reasonably foreseeable development scenario excludes the majority of the existing vegetation on the site. Therefore, this resource was dismissed from further analysis in the EA.

1.7.11 Wetlands

The U.S. Army Corps of Engineers defines wetlands as "areas saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). Due to the built environment of the West Heating Plant parcel, no vegetated wetlands are present within the project area. Any naturally occurring wetlands at the site have been eliminated by past construction activities, including the construction of the retaining wall. Additionally, based on field observations and a review of National Wetlands Inventory (NWI) mapping, no wetlands are present on the site. Therefore, wetlands were dismissed from further analysis in the EA.

1.7.12 Wildlife

Due to the built environment of the West Heating Plant parcel, there are little to no wildlife species on the site. In a letter dated August 3, 2011, the U.S. Fish and Wildlife Service stated that there are no federally listed threatened and endangered species in the project vicinity, and that further consultation was not required (see Appendix A). Due to the limited natural vegetation on the parcel, the site does not likely support any state-listed or other rare species. Therefore, this resource was dismissed from further analysis in the EA.

1.8 WHAT RESOURCE TOPICS ARE STUDIED IN DETAIL IN THE EA?

Resources of concern that would potentially be affected, either beneficially or adversely, by the proposed action and alternatives were studied in detail. Resource topics were identified based on internal and public scoping efforts, as well as Federal laws, regulations, Executive Orders, and related documentation. It is important to note that impacts to these resources are primarily indirect impacts from potential future construction on the site and are not a direct result of the proposed action, which is disposal of the West Heating Plant parcel. Chapter 3 contains a detailed discussion of these resources.

Resources retained for analysis in this EA:

- Transportation
- Water Resources
- Historic Resources
- Visual Resources
- Noise
- Hazardous Materials and Waste/Public Health and Safety

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2. DESCRIPTION OF ALTERNATIVES

The CEQ's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* establish a number of policies for Federal agencies, including "using the NEPA process to identify and assess reasonable alternatives to the proposed action that would avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 (e)). This chapter provides a description of project alternatives evaluated in detail in this EA, including the No-Action Alternative and the Disposal Alternative.

2.1. WHAT IS THE NO-ACTION ALTERNATIVE AND WHY IS IT CONSIDERED?

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel, and current uses of the site would continue. GSA would continue to maintain the parcel in a caretaker status, and there would not be any future redevelopment of the site. The No-Action Alternative would not meet the purpose of and need for the proposed action because it would not be consistent with the June 20, 2010, Presidential Memorandum (*Presidential Memorandum – Disposing of Unneeded Federal Real Estate*) that calls for Federal agencies to identify and dispose of excess properties. Nevertheless, CEQ guidelines (40 CFR 1502.14) stipulate that the No-Action Alternative should be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented and to serve as a baseline for comparing impacts of the proposed action. Therefore, the No-Action Alternative has been retained for analysis in this EA.

2.2. WHAT ACTION ALTERNATIVE HAS GSA EVALUATED IN THIS EA?

As described in Chapter 1 of this EA, GSA's proposed action is the disposal of the West Heating Plant parcel, which includes the Plant itself and other associated infrastructure as described in Section 1.5.2. Disposal of the parcel by GSA would remove the property from Federal ownership, and the land would become subject to the District's land use and taxing authority. All future development or reuse would be subject to local zoning, permitting, and other applicable land use controls. GSA would not restrict future use of the property should it leave Federal ownership other than potential deed restrictions as are authorized by statute for the protection of human health, the environment, and historic resources. Notices or covenants that would be included with the deed pertain to the following list below (also see Appendix F):

- Hazardous substances (including lead based paint, asbestos, and polychlorinated biphenyls)
- Navigable Airspace
- Historic and Cultural Preservation
- Floodplains
- Existing telecommunications leases
- Access to the C&O Canal retaining wall
- Maintenance of the existing seawall/landscaping
- Sealing of existing underground tunnels

- Document box discovery

The parcel would be disposed of in an "as is/where is" condition. GSA fully discloses the known condition of the property and what is on the property in bid documents. Disclosure includes such information as location of infrastructure and presence of known hazardous materials, whether a property is in a floodplain, and the condition of structures and appurtenances on the property. This allows potential bidders to have access to information on the property before they formulate their bids.

While the proposed action is the disposal of the West Heating Plant parcel, GSA has identified a reasonably foreseeable development scenario that could occur after disposal has occurred in order to adequately characterize all of the potential impacts of the proposed action, including indirect impacts. The potential future development of the site is unknown at this time; however, some reasonable assumptions have been made regarding potential future uses. The reasonably foreseeable development scenario, along with the rationale for including this scenario for analysis in the EA, is described in greater detail in Chapter 3. Chapter 3 also contains a discussion of types of impacts – direct, indirect, and cumulative – that are discussed in this EA.

2.3. WHAT ALTERNATIVES WERE CONSIDERED BUT DISMISSED?

During the disposal process discussed in Chapter 1, GSA consulted with other Federal agencies to assess whether the agencies had an interest in acquiring the property. Neither Federal agencies nor the District of Columbia expressed an interest in ownership of the property or portions thereof during this process. During the comment period for the Draft EA, it was suggested that the property might be subdivided or easements placed on it so that portions of the property could be designated and protected as parks or open space. Although NPS amplified this comment in a Section 106 meeting on October 4, 2012 by stating that NPS would be willing to accept the transfer of certain rights to NPS in the West Heating Plant parcel via easement, NPS did not make a request for the transfer of easement rights in the formal Federal screening process, which concluded on November 19, 2011, nor has it done so since. In addition, GSA does not have the authority to place restrictive easements on the property, other than those required by law. Subdivision of the property would leave GSA with ownership of an uneconomic remnant of property that it would be responsible to maintain, and the property would not present best value to the government. The creation of uneconomic remnants would be in conflict with the June 20, 2010 Presidential Memorandum *(Presidential Memorandum – Disposing of Unneeded Federal Real Estate)*. It also remains possible for future property owners to convey easements to the park service and to provide community benefits, such as open space and parkland, during the development process. As there are tax incentives and other economic benefits associated with many of these community benefits, and subdivision would create uneconomic remnants of property, the alternative incorporating subdivision or transfer of certain rights to NPS via easement was therefore considered but dismissed. No other action alternatives were considered. The only feasible action is to dispose of the property in its entirety, following the process for disposal of Federal property.

2.4. WHAT ARE THE IMPACTS FROM EACH ALTERNATIVE?

Table 2-1 presents, for comparison purposes, a concise summary of each alternative's potential impacts by resource topic. Mitigation measures, best management practices, and review processes for each resource area are described following Table 2-1, in Section 2.3.1.

Table 2-1 Comparison of Alternatives.

Resource Area	No-Action Alternative	Disposal Alternative
Transportation	No effect. The 30th Street intersection with M Street would operate at Level of Service (LOS) F under the No-Action Alternative. The No-Action Alternative would result in a near failing LOS for the K Street westbound approach to 29th Street.	**Direct impacts:** No direct impacts. **Indirect impacts:** Two developments near the West Heating Plant parcel would open by 2017 that would add background vehicle trips to the study area, which would add trips to the intersections in the area. Impacts would be minor to moderate and long-term. Each intersection would be affected by the new trips added from the reasonably foreseeable development scenario for the West Heating Plant site (in addition to the trips from the nearby developments). Impacts would be minor to moderate and long-term. The 30th Street intersection with M Street, NW would operate at LOS F regardless of whether the West Heating Plant was disposed. The 29th Street intersection at M Street and the 30th Street intersection with K Street would both be affected moderately. Impacts would be minor to moderate and long-term. The 29th Street intersection with K Street, NW would be minimally affected, with new trips turning between 29th and K Street. The No-Action Alternative would result in a near failing LOS for the K Street westbound approach; therefore, the 25 second increase in delay with the Disposal Alternative does not immediately warrant mitigation. Impacts would be minor and long-term.
Water Resources	No effect.	**Direct impacts:** No impacts from disposal. **Indirect impacts:** Surface water: minor, temporary indirect impacts from runoff during construction after disposal has occurred. Groundwater: no indirect impacts from construction after disposal has occurred. Floodplains: minor, indirect impacts from construction in a floodplain, after disposal has occurred.

Resource Area	No-Action Alternative	Disposal Alternative
Historic Resources	No effect.	**Direct impacts:** No direct impacts for all historic properties. **Indirect impacts:** Minor short-term indirect impacts to all historic properties except Godey Lime Kilns from construction. West Heating Plant: Negligible to moderate long-term indirect impacts to contributing features. Georgetown Historic District (HD): Minor long-term indirect impacts. C&O Canal HD and Locks 1 and 2: Negligible long-term indirect impacts. Rock Creek and Potomac Parkway HD: Negligible long-term indirect impacts. Godey Lime Kilns: Negligible long-term indirect impacts. **Section 106 impacts:** No adverse effect.
Visual Resources	No effect.	**Direct impacts:** No direct impacts. **Indirect impacts:** Local Visual Resources: Negligible long-term indirect impacts. Views of the West Heating Plant: Moderate long-term, adverse indirect impacts. Neighborhood Character: moderate long-term indirect impacts. **Section 106 impacts:** No adverse effect.
Noise	No effect.	**Direct impacts:** No direct impacts. **Indirect impacts:** Minor, short-term impacts from construction noise after disposal has occurred. Minor, long-term impacts from a slight increase in vehicular traffic and new development on the site after disposal has occurred.
Hazardous Materials and Waste/Public Health and Safety	No effect.	**Direct impacts:** No direct impacts. **Indirect impacts:** Moderate, short-term impacts if appropriate remediation/removal is not undertaken.

2.3.1 Mitigation Measures, Best Management Practices, and Review Processes

Mitigation measures include (per 40 CFR 1508.20):

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- Compensating for the impact by replacing or providing substitute resources or environments.

Best management practices may also be required for certain activities. Best management practices are typically not considered mitigation measures, but are included in the discussion to demonstrate measures that could be implemented by the developer of the West Heating Plant parcel (after disposal has occurred) to minimize impacts. Best management practices are routine preventative measures that reduce impacts from the proposed action; common best management practices include implementing soil erosion controls, such as silt fences, following standard operating procedures such as those implemented to prevent contamination from hazardous materials, or instituting dust suppression measures, such as wetting the ground, to prevent particulate matter from entering the air during construction.

After the disposal process has occurred, the developer would need to coordinate their proposed development plans with appropriate District of Columbia agencies, such as the DDOT, DCOP, DC SHPO, and DDOE, which would be the primary reviewers. The U.S. Commission of Fine Arts would also review development plans. Additional information on where to access information on these agencies is listed below:

- DDOT: http://ddot.dc.gov/DC/DDOT/;
- DCOP: http://planning.dc.gov/DC/Planning;
- DC SHPO: http://planning.dc.gov/DC/Planning/Historic+Preservation;
- DDOE: http://green.dc.gov/;
- U.S. Commission of Fine Arts: www.cfa.gov.

It should be noted that, for the proposed action, GSA would be responsible for mitigating impacts resulting from the actual disposal of the West Heating Plant parcel. The developer or future owner of the property would be responsible for mitigating potential impacts from future construction activities after disposal has occurred, in accordance with appropriate Federal and District of Columbia regulations. During the disposal process, GSA may also apply covenants associated with the deed transfer as deemed necessary to ensure protection of the human and natural environment once the property has left GSA ownership (see Appendix F).

Transportation

Mitigation measures would not be required for disposal.

The District may require mitigation measures be implemented by the developer to reduce potential impacts to traffic from future development after disposal has occurred. The measures described below are based upon a reasonably foreseeable development scenario identified for the West Heating Plant parcel. At the discretion of DDOT the developer would be required to conduct a traffic impact study for any future development and specific mitigation measures would be determined by DDOT, based upon the traffic study conducted by the developer.

- The 29th Street intersection at M Street, NW: implement traffic signal upgrades.
- The 30th Street intersection with K Street, NW: perform a signal warrant analysis. A quick analysis in Synchro shows that a new signal would elevate this intersection to Level of Service (LOS) A for all time periods. Another consideration would be to remove the stop signs at the 30th Street intersection with K Street; however, the Whitehurst Freeway travels overhead potentially requiring a safety study to determine the potential impacts caused by the sight distances partially blocked by the Whitehurst Freeway columns.
- The 29th Street intersection with K Street, NW: The No-Action Alternative would result in a near failing LOS for the K Street westbound approach; therefore, the 25 second increase in delay with the Disposal Alternative does not immediately warrant mitigation. The developer may be required to further study this intersection based upon the actual land use proposed for the West Heating Plant parcel.
- There is a proposed streetcar along K Street that could shift more new trips to transit beyond the 25 percent already shifted during the trip generation process. This would lower the new trips produced and improve the LOS for all study area intersections, especially the two K Street intersections.

Due to the anticipated impacts from future development and added trips from the reasonably foreseeable development scenario (representing the highest level of use for the W-2 zone), a full range of travel demand management (TDM) measures would likely be required from any developer.

Water Resources

Mitigation measures would not be required for disposal. GSA would, in compliance with EO 11988, notify potential bidders/buyers of the West Heating Plant parcel that the site is located within the 100-year floodplain.

Best Management Practices and Review Processes:

In accordance with Federal and District of Columbia regulations, the developer may be required to implement best management practices to control runoff into the nearby Rock Creek and C&O Canal through the use of sediment and erosion control measures, such as silt fences, developing

appropriate stormwater management plans, and complying with required permits under the Clean Water Act and the DDOE Water Quality program (DDOE, 2003).

The future owner/developer may be required to implement best management practices to prevent contamination of groundwater during construction, such as not allowing fuels or other materials to leach into the ground.

The future owner/developer may be required to obtain permits and follow best management practices for construction in a floodplain, which could include following established guidelines for construction of buildings, maintaining the natural channels of Rock Creek and the C&O Canal (i.e., not building within the channels), or developing a flood management plan.

The future owner/developer may be required to follow best management practices for construction in a waterway in order to repair the retaining wall, following established DDOE guidelines for construction in or restoration of waterways (DDOE, 2003).

Historic Resources

The primary measure for the disposal of the West Heating Plant property into private ownership would be the completion of the Section 106 process under the NHPA. GSA has been in consultation with the DC SHPO, the Advisory Council on Historic Preservation (ACHP), and Consulting Parties on a covenant to be placed in the transfer documents that would afford protection to the West Heating Plant as a historic property and meet the requirements of a No Adverse Effect determination under the Section 106 of the NHPA. The conclusion of the Section 106 process is documented in this EA. GSA has (a) developed documentation in a Determination of Eligibility form describing the West Heating Plant's significance and its contributing features and (b) sought the concurrence of the DC SHPO in a determination of no adverse effect under Section 106 based upon historic preservation covenants. The covenant will impose upon the buyer the obligation to develop the property in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation Standards and Guidelines) and subject to the review of the DC Historic Preservation Review Board, the U.S. Commission of Fine Arts and the Old Georgetown Board, the DC Zoning Commission, and other relevant public processes, all of which allow for extensive citizen comment (see Appendix F).

Best Management Practices and Review Processes:

The future owner would be required to submit any development reuse or development proposal through the following public processes which can be anticipated to mandate concern and feasible protection to historic resources.

- The action of the District of Columbia Zoning Commission.
- The review of the DCOP.
- The review of the District of Columbia Historic Preservation Review Board.
- The review of the DC SHPO.
- The oversight of the Mayor's Special Agent for Historic Preservation, if applicable.

- The review and permitting authority of the Old Georgetown Board of the U.S. Commission of Fine Arts.
- Separate review by the U.S. Commission of Fine Arts under the Shipstead-Luce Act.

The role of these public review agencies is discussed in greater detail in Section 3.7.2.

Visual Resources

Mitigation measures would not be required for disposal.

Best Management Practices and Review Processes:

The future owner would be required to submit any development reuse or development proposal through the following public processes which can be anticipated to mandate concern for and feasible protection to historic, visual, and neighborhood character values.

- The action of the District of Columbia Zoning Commission.
- The review of the DCOP.
- The review of the District of Columbia Historic Preservation Review Board.
- The review of the DC SHPO.
- The oversight of the Mayor's Special Agent for Historic Preservation, if applicable.
- The review and permitting authority of the Old Georgetown Board of the U.S. Commission of Fine Arts.
- Separate review by the U.S. Commission of Fine Arts under the Shipstead-Luce Act.

Noise

Mitigation would not be required for disposal.

Best Management Practices and Review Processes:

The future owner/developer would be required to abide by the DC Noise Ordinance during construction activities and may implement best management practices, such as limiting construction noise to specific hours, or utilizing noise buffers on construction equipment, to minimize potential impacts to nearby residents from noise (DCDRCA, 1977).

Hazardous Materials and Waste/Public Health and Safety

Mitigation would not be required for disposal, per concurrence from DDOE. GSA would, however, notify potential bidders/buyers of the West Heating Plant parcel of the presence of hazardous materials on the site, as determined by the Phase II Environmental Site Assessment (ESA) and Human Health Risk Assessment conducted for the site (see Appendix F).

Best Management Practices and Review Processes:

After the disposal of the property, the developer/future owner may be required to comply with recommendations provided by the Phase II ESA and Human Health Risk Assessment to minimize potential impacts from hazardous materials on the site and ensure protection of human health and safety. The developer would also be required to coordinate with the U.S. Environmental Protection Agency (USEPA) and DDOE, per the recommendations in the two studies, which would dictate the level of remediation needed.

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3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental conditions in the project area as well as potential impacts from implementing the proposed action, which is disposal of the West Heating Plant parcel. Additionally, this chapter explains how impacts are evaluated and why a reasonably foreseeable development scenario for the West Heating Plant parcel was developed.

3.1. WHAT IS THE AFFECTED ENVIRONMENT?

The affected environment is a description of the existing condition of environmental resources potentially affected by the proposed action. The following resource areas are analyzed in detail in this EA:

- transportation;
- water resources;
- historic and visual resources;
- noise; and
- hazardous materials/public health and safety.

Section 1.7 contains a list of resources that have been eliminated from further analysis in this EA.

3.2. HOW ARE IMPACTS EVALUATED?

Impacts from the proposed action can either be direct or indirect. CEQ regulations define "direct" impacts as those that are caused by the action and occur at the same time and place, while "indirect impacts" are defined as those caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable.

For the purpose of this project, direct impacts are those resulting from the proposed disposal of the West Heating Plant parcel, while indirect impacts are those resulting from potential future redevelopment of the site.

Direct Impacts:

- Occur at the same time and place as the proposed action.

Indirect Impacts:

- Occur later in time or are farther removed in distance but still reasonably foreseeable.

Potential impacts (both direct and indirect) are described in terms of:

- *Intensity* – are the effects negligible, minor, moderate, or major?
- *Type* – are the effects beneficial or adverse?

- *Duration* – are the effects short-term, lasting through construction or less than one year, or long-term, lasting more than one year?
- *Context* – are the effects site-specific, local or even regional?

The thresholds for the intensity of impacts are defined as follows:

- *Negligible* – when the impact is localized and not measurable at the lowest level of detection;
- *Minor* – when the impact is localized and slight, but detectable;
- *Moderate* – when the impact is readily apparent and appreciable; or
- *Major* – when the impact is severely adverse, highly noticeable, and considered to be significant.

Cumulative impacts from the proposed disposal of the West Heating Plant parcel, when added to other past, present, and reasonably foreseeable future projects are discussed at the end of this chapter.

The analysis of impacts follows CEQ guidelines and GSA's *PBS NEPA Desk Guide* and incorporates the best available information applicable to the setting and the actions being considered in the alternatives. For each resource topic addressed in this chapter, the applicable analysis methods are discussed, including assumptions for the analysis.

3.3. WHY IS GSA ANALYZING A REASONABLY FORESEEABLE DEVELOPMENT SCENARIO (RFDS)?

CEQ regulations require that agencies analyze the potential impacts of the proposed action on the natural and human environment. While the proposed action would result in *direct* impacts from disposal of the West Heating Plant parcel, there would also be *indirect* impacts from future redevelopment of the site after disposal has occurred. To adequately analyze the indirect impacts that may result from the disposal, GSA identified a reasonably foreseeable development scenario that could occur subsequent to implementation of the proposed action. It is important to underscore, however, that the reasonably foreseeable development scenario does *not* constitute GSA's proposed action of disposal. Furthermore, indirect impacts as identified in this analysis include the potential impacts from a reasonably foreseeable development scenario, not the proposed disposal.

3.4. WHAT IS THE RFDS AND HOW WAS THE RFDS DETERMINED?

GSA, with input from DCOP and DDOT, developed the reasonably foreseeable development scenario based on several assumptions, which are described in the following sections. Evaluation of the impacts from a reasonable future use of the property is not intended to indicate that GSA would restrict or prescribe future use of the property should it leave Federal ownership. Additionally, the proposed disposal would not include the control of any reuse of the property other than potential deed restrictions as are authorized by statute for the protection of human health, the environment, and historic resources. While future use of the property is not certain

because the site is not zoned, for the purpose of this EA analysis, GSA assumed a scenario of future development on the site that represents the highest level of buildout that could reasonably occur (for example, the scenario assumes the largest and tallest buildings, and the highest densities, etc.) under W-2 zoning, which is how adjacent properties are zoned, in order to adequately characterize the most extreme potential indirect impacts that could occur.

For the purpose of NEPA analysis, the scenario would result in the following mix of maximum densities allowable under W-2 zoning on the 2.08-acre West Heating Plant parcel:

- 181,210 SF of residential development, and
- 181,210 SF of commercial and retail (non-residential) development.

In order to calculate the reasonably foreseeable development scenario and arrive at the development types above, GSA first identified all of the potential site development constraints on the existing parcel, as described in greater detail below.

It is assumed that unrestricted development would not occur. As mentioned in Chapter 1, future development would be subject to local zoning, permitting, and land use controls. As also discussed in Chapter 1, the DCOP may require the site to be developed as a PUD, which is a special multi-purpose project that permits "flexibility of development and other incentives, provided that the project offers a commendable number or quality of public benefits in a manner consistent with the District Comprehensive Plan."

3.4.1 Constraints to Development

Buildable Area

Although the entire West Heating Plant parcel is 2.08 acres, the buildable area is only 1.51 acres. The developable area includes the area currently occupied by the existing building, parking, and heating plant infrastructure. It excludes the area of the parcel outside the existing retaining wall and under the Whitehurst Freeway right-of-way (Figure 3-1). In addition, the property does not include the canal wall, and future development would need to allow NPS to access the wall for maintenance. In the conveyance documents, an access provision will be incorporated to allow NPS to reach the canal bulkhead wall for maintenance (see Appendix F).

Zoning Regulations

As a Federal property, the West Heating Plant parcel is unzoned. However, the zoning designation for all private property adjacent to the site is W-2, Waterfront District, Medium Density (Mixed Use). The DCOP Zoning Regulation 11-9 and W-2 Zoning Criteria allow, as a matter of right, a mix of uses (residential, commercial, public recreation, light industrial), at specified densities and lot coverages. The maximum lot capacity is 75 percent for

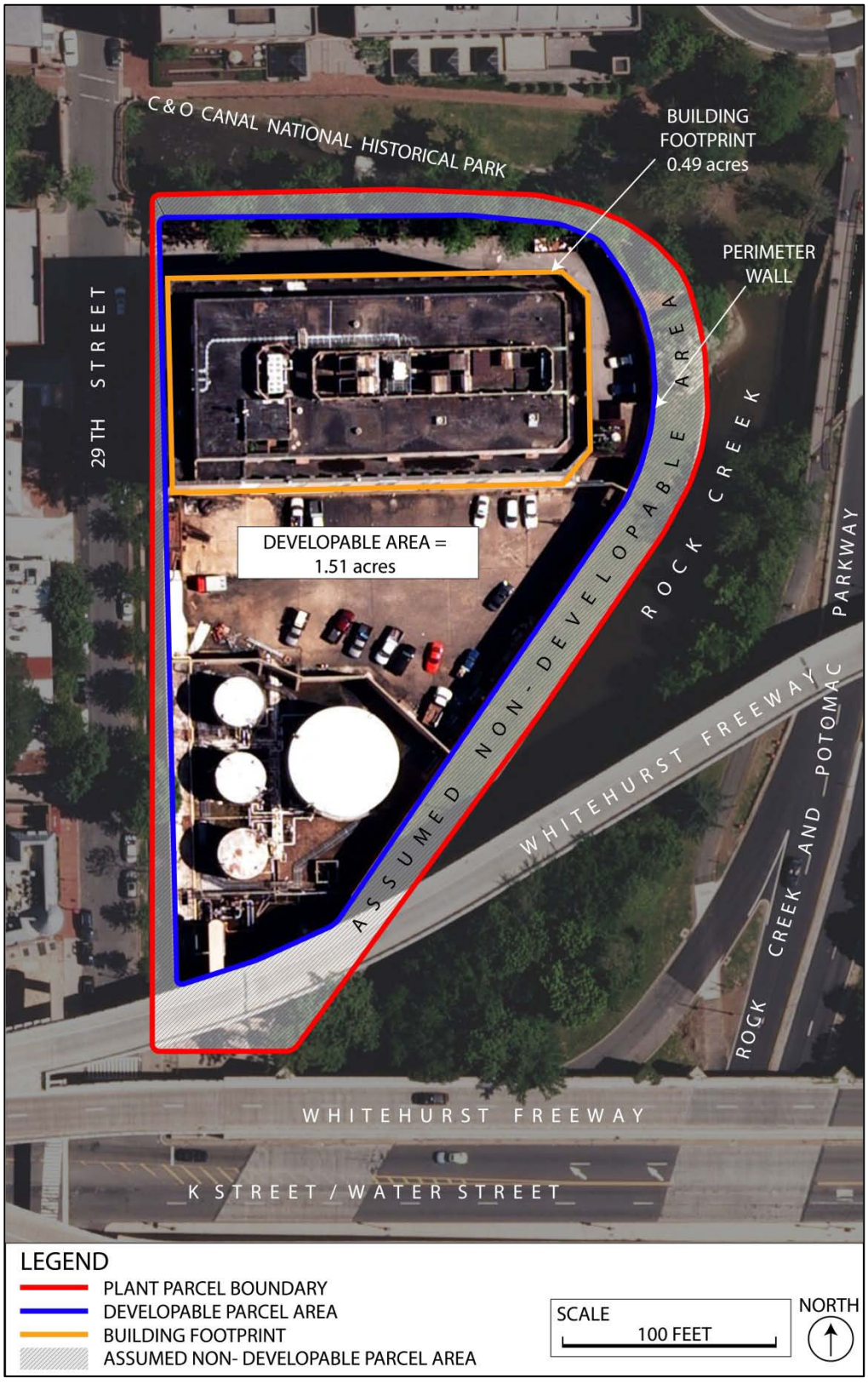
residential/public recreation/community centers. Since the buildable area of the site is identified to be 1.51 acres of the total 2.08 acres of the parcel, the buildable area itself is 73 percent of the site. Therefore, the 75 percent lot coverage constraint would not apply since the buildable area is already less than 75 percent of the total parcel area.

Additional zoning constraints include:

- In the W-2 District, the floor area ratio (FAR) of all buildings and structures on a lot shall not exceed four, and not more than two of which may be used for other than residential purposes.
- "Residential purposes" includes dwellings, flats, multiple dwellings, rooming and boarding houses, community based residential facilities, inns, and guestroom areas and service areas within hotels.
- Maximum height of 60 feet.

Floor Area Ratio (FAR) is the total square feet of a building divided by the total square feet of the lot on which the building is located. Higher FARs indicate a higher density of development.

Figure 3-1 West Heating Plant Parcel Developable Area.



- 12-foot minimum rear yard requirement.
- No side yard is required; however, if a side yard is provided, the minimum width shall be at least 8 feet.

Riparian Buffers

Riparian buffer recommendations are generally site specific and depend upon site characteristics such as slope, soils, and adjacent properties. The site currently has a built-in riparian buffer in the form of a retaining wall and lawn area on the north to south axis parallel to Rock Creek. It is assumed that DDOE would place restrictions upon development in the riparian buffer during the development review process.

3.4.2 Development Assumptions

For the purposes of NEPA analysis, GSA made several assumptions with respect to the uses and densities that could produce the highest amount of impacts within the framework of W-2 development and other applicable laws and regulations, based on the constraints identified previously. These assumptions are described below.

Redevelopment

- The site would be developed in accordance with W-2 Zoning district regulations (residential, commercial, public recreation, light industrial).
- Site ingress and egress would remain the same.
- The building shell would remain intact, but internal structures could be altered/removed.
- Build out would occur by 2017.

Typically, office and retail uses, particularly retail, produce the greatest number of vehicle trips in comparison to residential and other less-intense uses. As a result, an assumption of the highest level of use and associated impacts on this site would provide for maximum commercial and retail development allowable. Under W-2 regulations, this would be half of all allowable development. These uses are allowable up to 2.0 FAR of the total allowable 4.0 FAR. The remainder would be residential uses developed under the 2.0 FAR allowable balance.

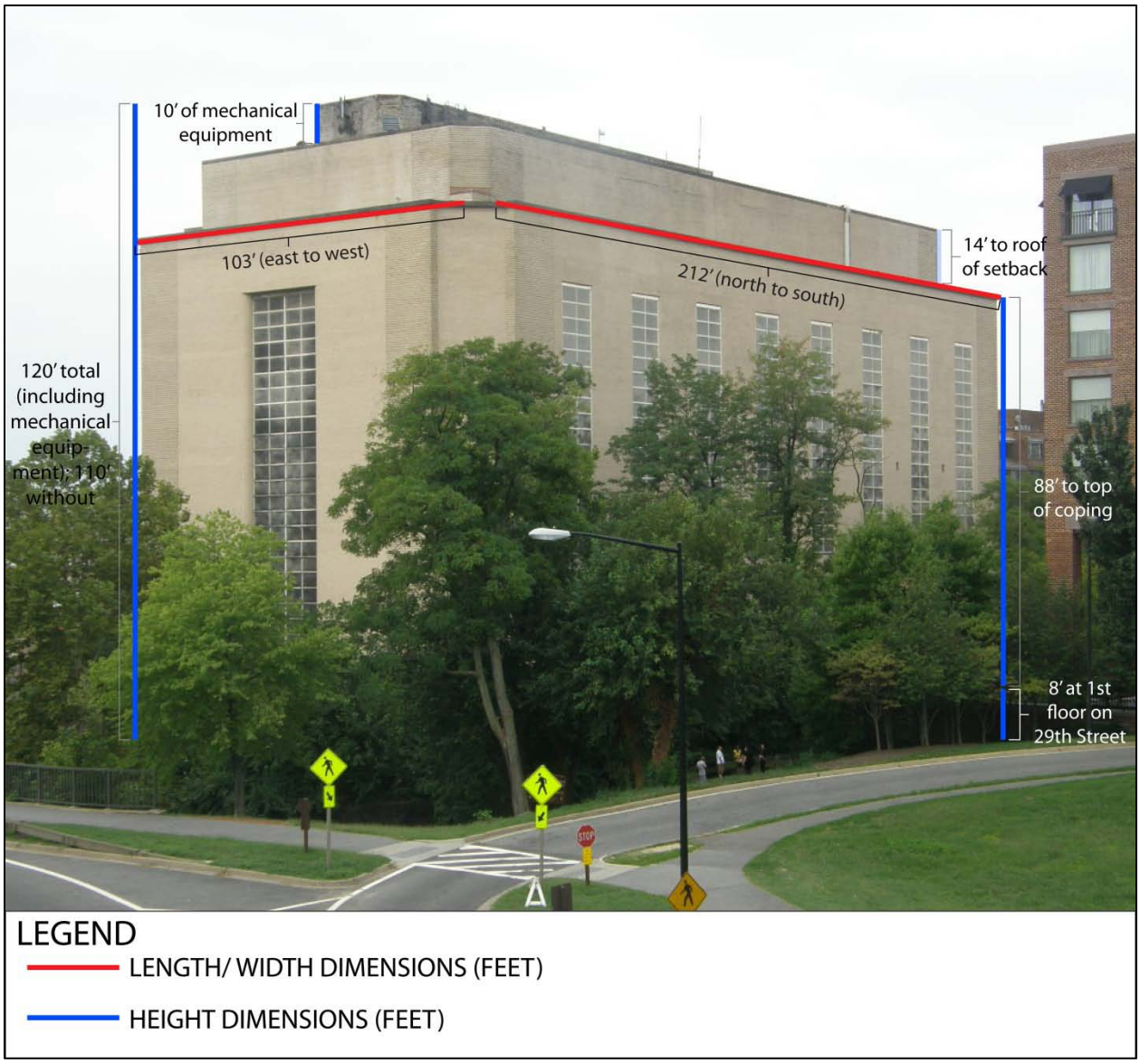
This could result in a total of 181,210 SF of residential development and 181,210 SF of commercial and retail (non-residential) development that could be achieved under W-2 zoning on the 2.08-acre parcel.

Existing Heating Plant Building

For the purpose of this NEPA analysis, GSA assumed that the existing heating plant building could be retained on the parcel and adaptively used in a manner consistent with W-2 zoning. The building is suited for interior renovations that could result in additional floors and a variety of uses contained within the existing structure. Given the nature of the surrounding uses and activities in the community and the property's location in Georgetown, the existing building is suited for placing restaurant and/or retail uses on the first floor. The remaining floors, including

new floors constructed within the current building, could be a mixture of office and residential. The heating plant structure could ultimately include up to seven stories. For purposes of this scenario, it is assumed that the existing building could be 50 percent residential and 50 percent office/commercial/retail. Figure 3-2 shows the building dimensions.

Figure 3-2 West Heating Plan Building Features



The façades of the West Heating Plant are character defining features of the building. Proposed adaptive uses and proposed alternations to the building's exterior should be compatible with the character of the building and determined by the DC SHPO to be consistent with the Secretary of the Interior's (Rehabilitation) Standards for the Treatment of Historic Properties.

The following assumptions are made with respect to the height of the different stories within the West Heating Plant structure:

- 22 feet Floor-to-Floor (F to F) for Restaurant/ Retail for first floor (ground floor)
- 13.2 feet F to F for Mixed Use/ Office

Calculations

- # of Floors
  - The first floor (currently at 8 feet above grade) would be Restaurant space.
  - The 66 feet above the first floor to the top of the coping would become five floors of a mix of Residential and Office uses.
    - 66 feet/ 13.2 feet F to F= 5 floors
  - The setback top floor of the building (14 foot height) would become the seventh floor. With the existing views afforded from this floor, Restaurant use would be appropriate.

- Gross Square Footage (GSF) (See Table 3-1)
  - 6 Floors x 21,400 SF = 128,400 GSF
  - 1 Floor x 15,200 SF = 15,200 GSF
  - 128,400 GSF + 15,200 GSF= 143,600 GSF
  - Residential Use: 71,800 SF
  - Non-Residential Use: 36,600 SF Restaurant (floor area of first and seventh floors), and 35,200 SF Office

Remainder of Parcel

The remainder of the parcel would be built out based on the allowable uses and densities remaining following reuse of the heating plant building and in accordance with W-2 district regulations. The redevelopment of the existing building and the remainder of the site would equal the maximum allowable development under W-2 zoning in order to achieve a scenario representing the highest level of allowable use in describing the indirect impacts of the proposed action.

Table 3-1 provides a breakdown of the uses and densities that would occur under this scenario for both the reuse of the existing heating plant building as well as the remaining developable portion of the site. Non-residential uses have been further distributed into specific non-residential land use categories. This is necessary because each of these categories generates different intensities of vehicle trips, which are key factors in considering the indirect impacts of the proposed action. Assumptions for the data appear after the table.

Table 3-1 Development Scenario.

	Residential		Non Residential				Total
			Total Non-Res	Restaurant	Office	Retail	
	SF	Units	SF	SF	SF	SF	
Total Allowable	181,210	181	181,210				362,419
Existing Building	71,800	72	71,800	36,600	35,200		143,600
Remainder	109,410	109	109,410	0	37,105	72,305	218,819
TOTAL	**181,210**	**181**	**181,210**	**36,600**	**72,305**	**72,305**	**362,419**

Assumptions:

- Numbers have been rounded.
- Total allowable GFA = 362,419 (FAR 4.0 x 90,605 SF or 2.08 Acres)
- Non-Residential GFA = 181,209.5 SF (up to 2.0 FAR of total allowable 4.0 FAR)
- Residential GFA = 181,209.5 SF (Remaining 2.0 FAR of allowable Total GFA)
- Residential at 1,000 SF/unit
- Existing building 50 percent residential, 50 percent non-residential.
- Non-residential uses on parcel:
  - Restaurant (36,600 SF) (1st and top floors of existing building).
  - Remainder (144,610 SF) divided evenly between office and retail.
- Residential uses on parcel:
  - Existing building (71,800 SF [72 units]) based on 50 percent of existing building potential SF
  - Remaining 109,410 SF (109 units) on remainder of site.

Residential Units

This scenario thus far has characterized foreseeable development densities in terms of residential and non-residential SF of development. For non-residential development, SF is an appropriate unit of measure to describe density; however, a more widely-accepted measure used to describe residential development is the number of residential units that would occur. Nevertheless, the W-2 district regulations define allowable densities of both residential and non-residential uses in terms of FAR, which would necessarily result in floor area (or SF). The DCOP typically assumes 1,000 SF per residential unit in its planning estimates (Personal Communication, Bird, 2012). Using this factor, approximately 181 new residential units would be provided in this scenario. The maximum allowed height of any new buildings would be 60 feet.

3.5. TRANSPORTATION

This section summarizes key elements of the accompanying stand-alone transportation study (see Appendix C). The transportation study was developed using the reasonably foreseeable development scenario described previously in Chapter 3. The study was also developed in coordination with DDOT. Any future private developer would likely be required to apply for zoning or undertake a PUD approval process, at which time the DDOT may require the developer to prepare a more rigorous transportation impact study. The scope of the transportation impact study would be determined by DDOT, depending upon the actual redevelopment proposal. DDOT at their discretion may require the developer to include analysis of additional intersections in the transportation study.

3.5.1 What are Existing Traffic and Transportation Conditions?

The West Heating Plant is located on the corner of 29th Street and K Street, NW in Georgetown, Washington, DC. The western boundary is located along 29th Street, NW while the southern boundary is located along K Street, NW. The principal roadways serving the site are 29th Street, K Street, Pennsylvania Avenue, and M Street, NW. All access is currently provided by 29th Street, NW. 30th Street, NW is the closest roadway that parallels 29th Street, NW. In coordination with the DDOT, GSA determined that the study area is bounded by the following four intersections (see Figure 3-3):

- 30th Street at M Street, NW
- 30th Street at K Street, NW
- 29th Street at M Street/ Pennsylvania Avenue, NW
- 29th Street at K Street, NW

Roadway Network

29th Street, NW is a two-lane roadway with parking allowed on both sides. It is classified by DDOT as a local roadway. 29th Street, NW is a north-south orientated roadway that travels between K Street, NW at the southern end to R Street at the northern end. Currently, the bridge crossing the C&O Canal is closed for reconstruction and is expected to reopen later this year. This bridge closure has temporarily separated the southern portion of 29th Street, NW from the remainder of the street, which includes the portion of the roadway serving the West Heating Plant. Currently vehicles accessing the West Heating Plant site must use K Street, NW, as there is no vehicle access to 29th Street, NW from M Street, NW.

K Street, NW is a four-lane roadway, with a center turning lane and is classified by DDOT as a principal arterial. K Street, NW is an east-west orientated roadway that connects Georgetown to Mount Vernon Square (Mount Vernon Triangle neighborhood) near the Washington Convention Center and travels under the Whitehurst Freeway through Georgetown.

Pennsylvania Avenue is a six-lane roadway, classified as a principal arterial by DDOT. This roadway is orientated northwest-southeast and connects 29th Street, NW with 17th Street, NW (near the White House) by way of Washington Square near George Washington University.

M Street, NW is a four-lane bidirectional roadway, classified by DDOT as a principal arterial west of the 29th Street, NW intersection. It becomes a three lane one-way westbound roadway, classified a minor arterial by DDOT east of the 29th Street, NW intersection.

30th Street, NW is a unidirectional roadway with one-lane, classified by DDOT as a local roadway. This road operates southbound only, providing a connection from M Street, NW to K Street, NW. The bridge carrying 30th Street, NW over the C&O Canal was recently reconstructed.

Other Roadways - In addition to K and M Streets, NW and Pennsylvania Avenue, NW, Rock Creek and Potomac Parkway provides direct connections to 29th Street, NW through ramps intersecting K Street, NW at the 29th Street, NW intersection. This roadway has four lanes and is oriented north-south connecting the Washington Mall to Chevy Chase, Maryland.

Study Area Intersections

30th Street at M Street, **NW (Study Area Intersection 1):** This intersection is a signalized intersection with a pre-timed signal. The 30th Street, NW southbound approach has one lane that serves all vehicular movement. Both M Street, NW approaches have two lanes, a left lane that serves through traffic and a right lane that serves right turning and through traffic.

29th Street at M Street, **NW (Study Area Intersection 2):** This intersection is a signalized intersection with a pre-timed signal. The 29th Street, NW approaches both have one lane that serves all moves. The M Street, NW eastbound approach has two through lanes, one left turning lane and one right turning lane. The M Street, NW westbound approach has two lanes with the left lane that serves left turns and through moves and the right lane that serves right turns and through moves.

30th Street at K Street, **NW (Study Area Intersection 3):** This intersection is an unsignalized intersection with stop signs posted at all approaches except the 30th Street, NW northbound approach. The 30th Street, NW northbound approach consists of one lane serving all moves. The 30th Street, NW southbound approach has two lanes, the left lane serves left turns and the right lane serves right turn and through moves. The K Street, NW eastbound approach consists of two lanes; the left lane serves through moves and the right lane serves right turning and through moves.

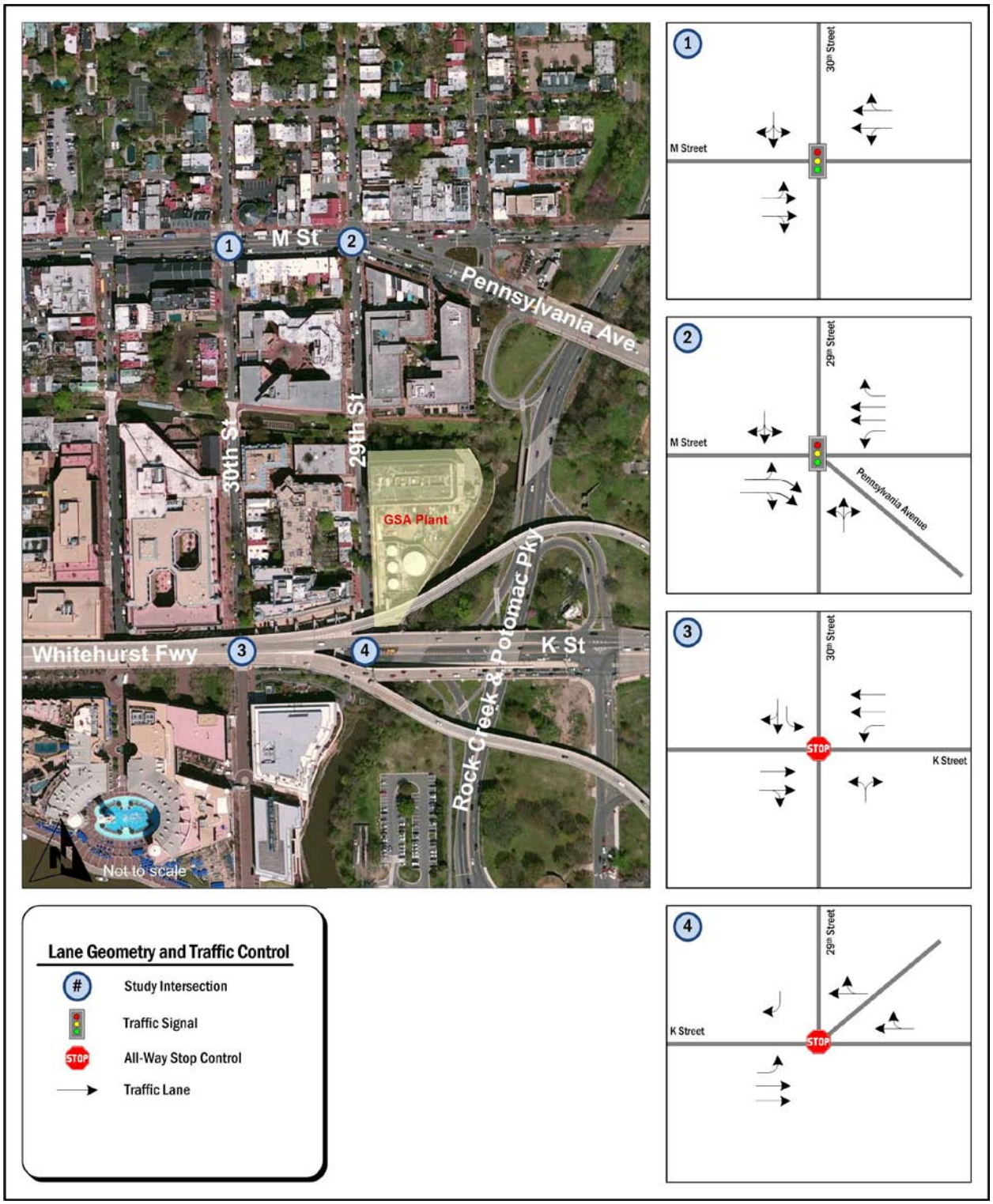
29th Street at K Street, **NW (Study Area Intersection 4):** This intersection is an unsignalized intersection with stop signs posted at all approaches. The 29th Street, NW approach consists of one lane with only right turns allowed. The K Street, NW eastbound approach consists of two through lanes and a left turning lane. The K Street, NW westbound approach consists of one lane serving through and right turning moves. The ramp from Rock Creek and Potomac Parkway southbound consists of one lane serving through and right turning moves.

Figure 3-3 shows the lane geometry and traffic controls for the study area intersections.

Site Access

The West Heating Plant site is only accessible from 29th Street, NW. There are two driveways, an entrance driveway just north of the 29th Street, NW intersection with K Street, NW and the other approximately 500 feet north of the 29th Street, NW intersection with K Street, NW. As discussed above, the bridge carrying 29th Street, NW over the C&O Canal is under construction; therefore, all vehicles must pass through the 29th Street, NW intersection with K Street, NW to access the site until the bridge is reopened, anticipated in Fall 2012.

Figure 3-3 Existing Lane Geometry and Traffic Control.



Transit

Eight bus routes operating along M and K Streets, NW serve the site. The Washington Metropolitan Area Transportation Authority (WMATA) operates the following linear routes: 31, 32, 36, 38B, D5, and D51. In addition, WMATA operates two Circulator routes, one connecting Georgetown to Dupont Circle and one connecting Georgetown to Union Station. During the morning and evening peak periods, WMATA operates 24 buses per hour along M Street, NW eastbound, 18 buses per hour along M Street, NW westbound, and 6 buses per hour along K Street, NW westbound only.

In addition to scheduled bus service, WMATA operates two subway lines in the vicinity of the West Heating Plant site. The closest Orange and Blue lines stations are located at Foggy Bottom (0.6 mile from the site) and Rosslyn (1.4 miles from the site). The closest Red Line station is Dupont Circle, which is 1.5 miles from the site. All three stations could be reached using the sidewalk network along M Street, NW Pennsylvania Avenue, NW and the Francis Scott Key Bridge.

Bicycle and Pedestrian Network

There are five bicycle/pedestrian trails near the West Heating Plant site. The C&O Canal tow path passes closest to the site connecting to 29th Street, NW at the site of the existing bridge construction project. This trail connects to the Rock Creek Trail to the east and Capital Crescent Trail to the west. The Capital Crescent Trail connects Georgetown to Silver Spring, Maryland, following the Potomac River between Georgetown and the Maryland State Line. The Rock Creek Trail connects the Washington Mall to Fernwood Heights, following Rock Creek and Potomac Parkway. Across the Francis Scott Key Bridge in nearby Virginia, the Martha Curtis Trail follows Route 66 between Rosslyn and Shirlington and the Mount Vernon Trail connects Rosslyn to Mount Vernon to the south.

Sidewalks are provided along both sides of 29th, 30th, K, and M Streets, NW, providing a complete pedestrian network. Crosswalks are provided at the 29th Street, NW intersection with K Street, NW along the 29th Street, NW southbound approach and K Street, NW westbound approach. Crosswalks are provided at the 29th Street, NW intersection with M Street, NW, 30th Street, NW intersection with K Street, NW, and 30th Street, NW intersection with M Street, NW at all four approaches. Sidewalks range from 6 feet through upwards of fifteen feet in some locations along 29th Street, NW. The minimum American with Disabilities Act (ADA) requirement of three foot clearances occurs along K Street, NW at each post supporting the Whitehurst Freeway. ADA compliant curb cuts are located at each striped crosswalk at all four intersections in the study area, including new recently installed ADA compliant curb cuts along K Street, NW serving the eastbound K Street, NW approach crosswalk. A temporary bridge carrying pedestrians and bicycles is located on the west side of the 29th Street, NW Bridge.

With WMATA scheduled bus service along K and M Streets, NW, pedestrian access to these stops is available following the existing sidewalk network. The closest bus stop is along K Street, NW, near the halfway point between 29th and 30th Streets, NW along the westbound side,

served by the Circulator bus. The next closest stops are along M Street, NW near the intersection of 29th Street, NW.

Parking

While there are driveways serving the West Heating Plant site, providing on-site parking for building employees, on street parking is available along 29th Street, M Street, and 30th Street, NW.

- 29th Street between M and K Streets, NW has approximately 40 spaces. North of the bridge (which is still under construction as of June 20, 2012), there are three 2-hour metered spaces on the west side of the street. Parking meter poles (with no heads) are currently in place on the east side of the street; it is anticipated that these spaces would be restored once construction is complete. Private parking is available under Georgetown Place and Four Seasons. South of the bridge, there are thirteen 2-hour metered spaces on the east side of the street and seven unmetered spaces on the west side of the street, with signs restricting parking to two hours except for Zone 2 permits. There are approximately two parking spaces marked "15 minute hotel loading" on the west side of the street for Georgetown Suites.
- There is no on-street parking on K Street, NW between 29th Street and 30th Street, NW. The driveway entrance to the private parking for Georgetown Suites is located on K Street, NW; the driveway also provides access to a small gravel parking lot that could accommodate approximately 12 vehicles.
- 30th Street between M and K Streets, NW has approximately 40 spaces. South of the bridge, there are four metered spaces on the east side, with an additional three to four spaces marked for diplomatic parking (Saudi Arabia) from 7:00 AM to 6:30 PM. There are also approximately 16 to 18 unmetered parking spots, with 2-hour parking limits south of the bridge on the east side of the street. The west side of the street has eight metered spaces, and approximately two unmetered spaces and two diplomatic spaces south of the bridge, plus the Foundry Building parking garage. North of the bridge, the east side includes eight metered spaces plus a three-space section marked loading zone, and restricted from 8:00 AM to 5:00 PM. These three spaces allow 2-hour parking from 5:00 PM to 10:00 PM Monday through Saturday. There is also a driveway to a private surface lot. The west side of the street north of the bridge has one metered space and approximately ten unmetered spaces, restricted to two hour parking except for Zone 2 residents.
- M Street, NW has approximately 10 restricted metered spaces between 29th and 30th Street, NW. No stopping is allowed from 7:00 AM to 9:30 AM or from 4:00 PM to 6:30 PM.
- As noted above, a variety of private parking facilities are located near the site, serving residential complexes, restaurants and hotels.

Data Collection

Manual turning movement, pedestrian, and bicycle counts were collected on Wednesday, April 12, 2012, during the AM peak period (6:30 AM – 9:30 AM) and PM peak period (3:30 PM – 6:30 PM) for the four study area intersections (29th Street, NW at K and M Streets, NW and 30th Street at K and M Streets, NW). In addition, manual turning movement, pedestrian, and bicycle counts were obtained on Saturday, April 15, 2012, between 7:00 PM and 10:00 PM to capture the peak weekend. These counts provided a snap shot of the traffic to create the existing vehicle, pedestrian, and bicycle conditions.

Based on the counts, the AM peak hour occurs between 8:30 AM and 9:30 AM, the PM peak hour occurs between 5:00 PM and 6:00 PM and the Saturday peak hour occurs between 7:00 PM and 8:00 PM. Using the raw traffic counts, all counts were rounded to the nearest five and the volumes between 29th and 30th Streets, NW along K and M Streets, NW were balanced. For example, all vehicles exiting the 29th at M Street, NW intersection headed westbound arrive at the 30th and M Street, NW intersection westbound approach. In some cases, the number of vehicles exiting one intersection did not match the number arriving at the downstream intersection (i.e., M Street from 29th to 30th Street, NW; K Street from 30th to 29th Street, NW). To adjust for these differences, the higher volume was used to calculate a balanced traffic flow, which will result in a more conservative analysis. Figure 3-4 shows the existing AM and PM weekday peak hour turning movement volumes; Figure 3-5 shows the existing Saturday peak hour turning movement volumes; Figure 3-6 shows the existing AM and PM weekday peak hour pedestrian and bicycle volumes; Figure 3-7 shows the existing pedestrian and bicycle Saturday peak hour volumes.

Existing Traffic Operation Analysis

The four intersections were analyzed using the latest version of the Synchro Intersection analysis Software. The four intersections analyzed consisted of two signalized and two unsignalized intersections. The vehicular volumes, pedestrian volumes, intersection control type (traffic signal or stop-sign controlled), roadway geometry, and speed limits for all four intersections were entered into the analysis software and the vehicle degree of saturation (counted volume to maximum capacity ratio), and average vehicle delay (seconds per vehicle) were calculated. Based on the vehicle delay, the level of service (LOS), a performance measure using a letter between A and F was determined for all approaches. LOS A through D represents stable conditions while LOS E or F represents unstable conditions and delays. All four study intersections were analyzed using the 2010 Highway Capacity Manual (HCM).

Based on the Synchro Software Signalized Intersection HCM 2010 analysis, the 30th Street, NW intersection with M Street, NW operates at LOS F during the AM weekday peak hour. As Table 3-2 shows, the M Street, NW eastbound approach has the longest vehicle delay with more than four minutes per vehicle, caused by left turning vehicles from M Street to 30th Street, NW northbound restricting through traffic. The M Street, NW westbound left lane approach experiences more than a two minute average delay per vehicle also caused by left turning vehicles.

During the PM weekday peak hour, the 30th Street, NW intersection with M Street, NW operates at LOS E. The eastbound M Street, NW left lane approach experiences over an eight minute average delay, caused by left turning vehicles and the westbound M Street, NW left lane approach experiences over a three minute delay per vehicle also caused by left turning vehicles.

During the Saturday peak hour, the M Street, NW intersection at 30th Street, NW operates at LOS F, with the longest average vehicle delay occurring in the M street, NW left lanes (over 16 minutes westbound), due to the left turning traffic.

The other signalized intersection, M Street at 29th Street, NW operates at LOS B or better during both weekday peak periods and Saturday peak hour, with all approaches operating at LOS D or better.

Based on the Synchro Software Unsignalized Intersection HCM 2010 analysis, the 30th Street, NW intersection with K Street, NW approaches operate at LOS C or better during the AM weekday peak hour, except for the K Street, NW westbound through movement, which operates at LOS F resulting from a 37 second average delay per vehicle. The PM weekday peak hour and Saturday peak hour operate at LOS D or better for all approaches. The 29th Street, NW intersection with K Street, NW operates at a C or better during the AM weekday peak hour, except for the K Street, NW westbound through movement, which operates at LOS F resulting from a 65 second average delay per vehicle. The PM weekday peak hour operates at LOS C or better and the Saturday peak hour operates at LOS D or better for all approaches. The Rock Creek and Potomac Parkway southbound off ramp is closed during the PM peak hour, as Rock Creek and Potomac Parkway operates in the northbound direction only. Table 3-2 shows the AM and PM peak hour weekday existing intersection analysis.

Figure 3-4 Existing AM and PM Weekday Peak Hour Turning Movement Volumes.

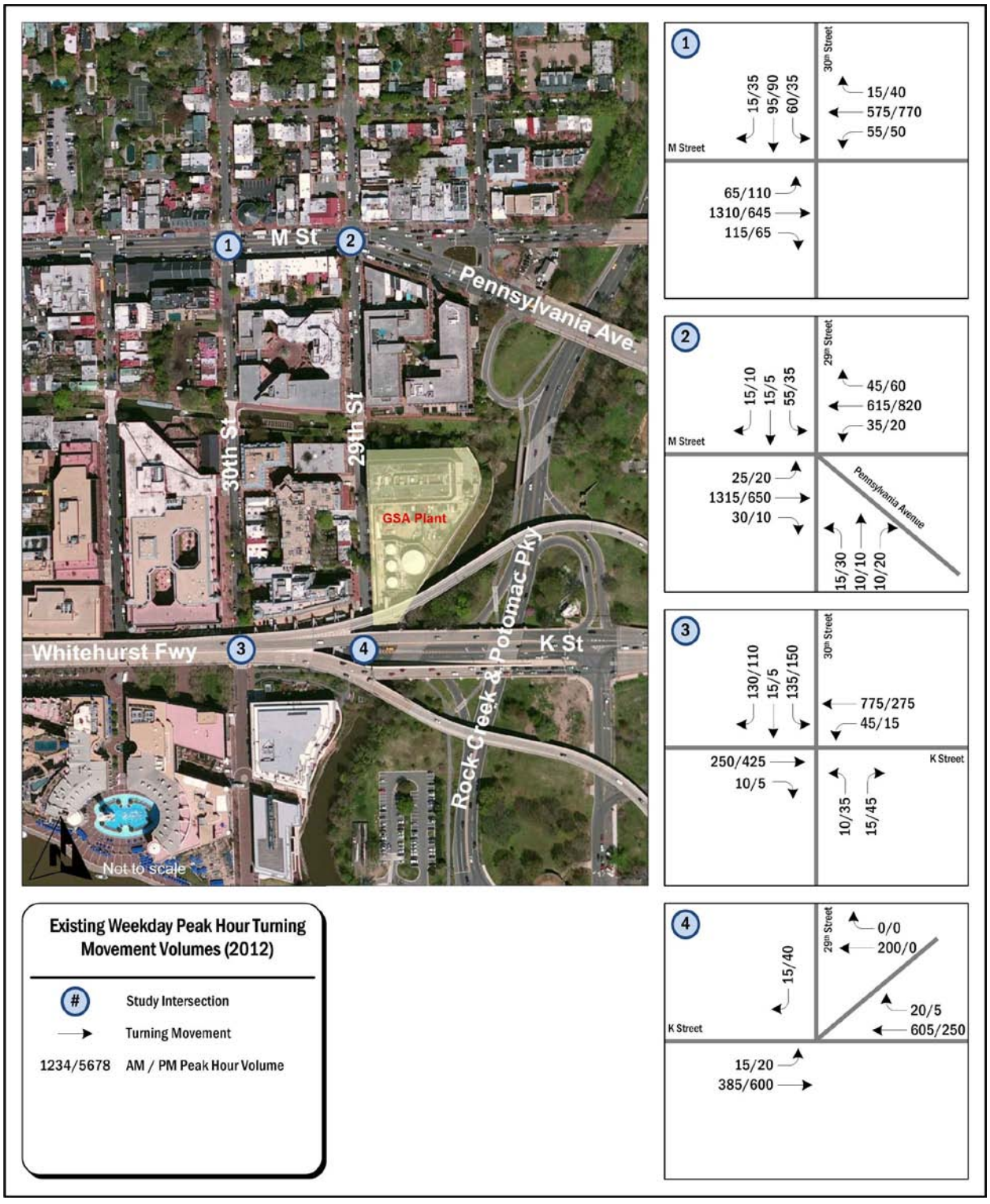


Figure 3-5 Existing Saturday Peak Hour Turning Movement Volumes.

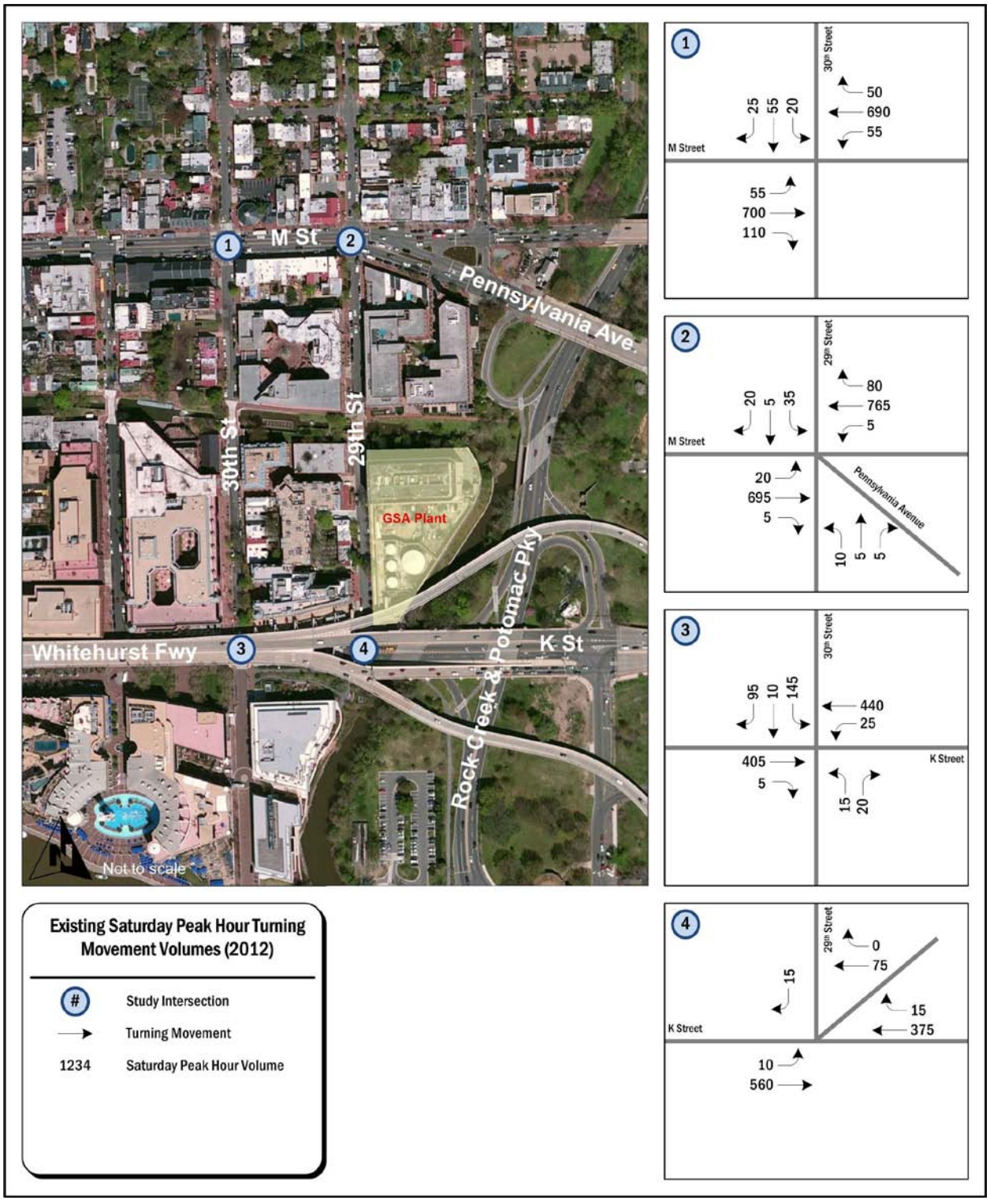


Figure 3-6 Existing AM and PM Weekday Peak Hour Pedestrian and Bicycle Volumes.

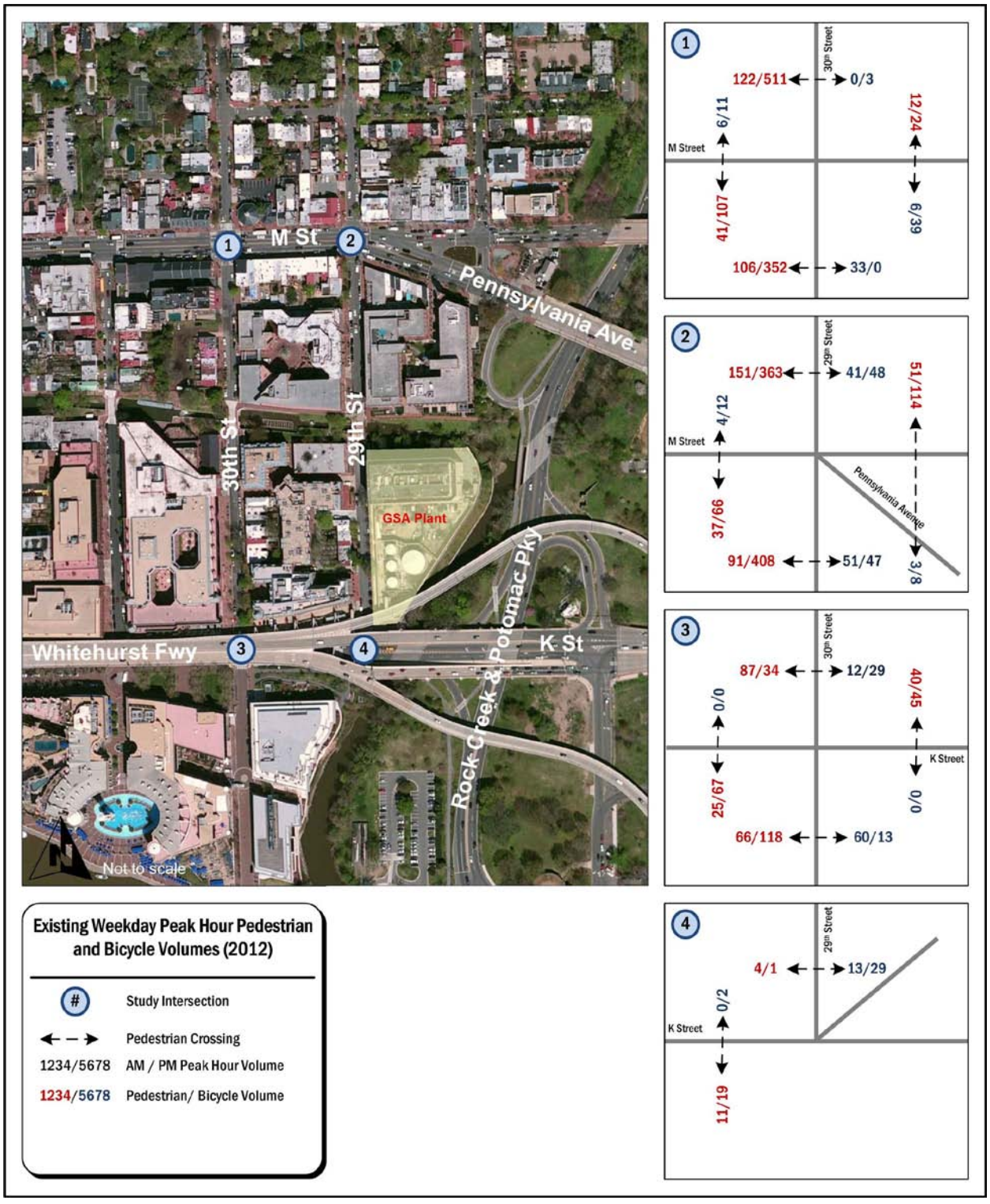
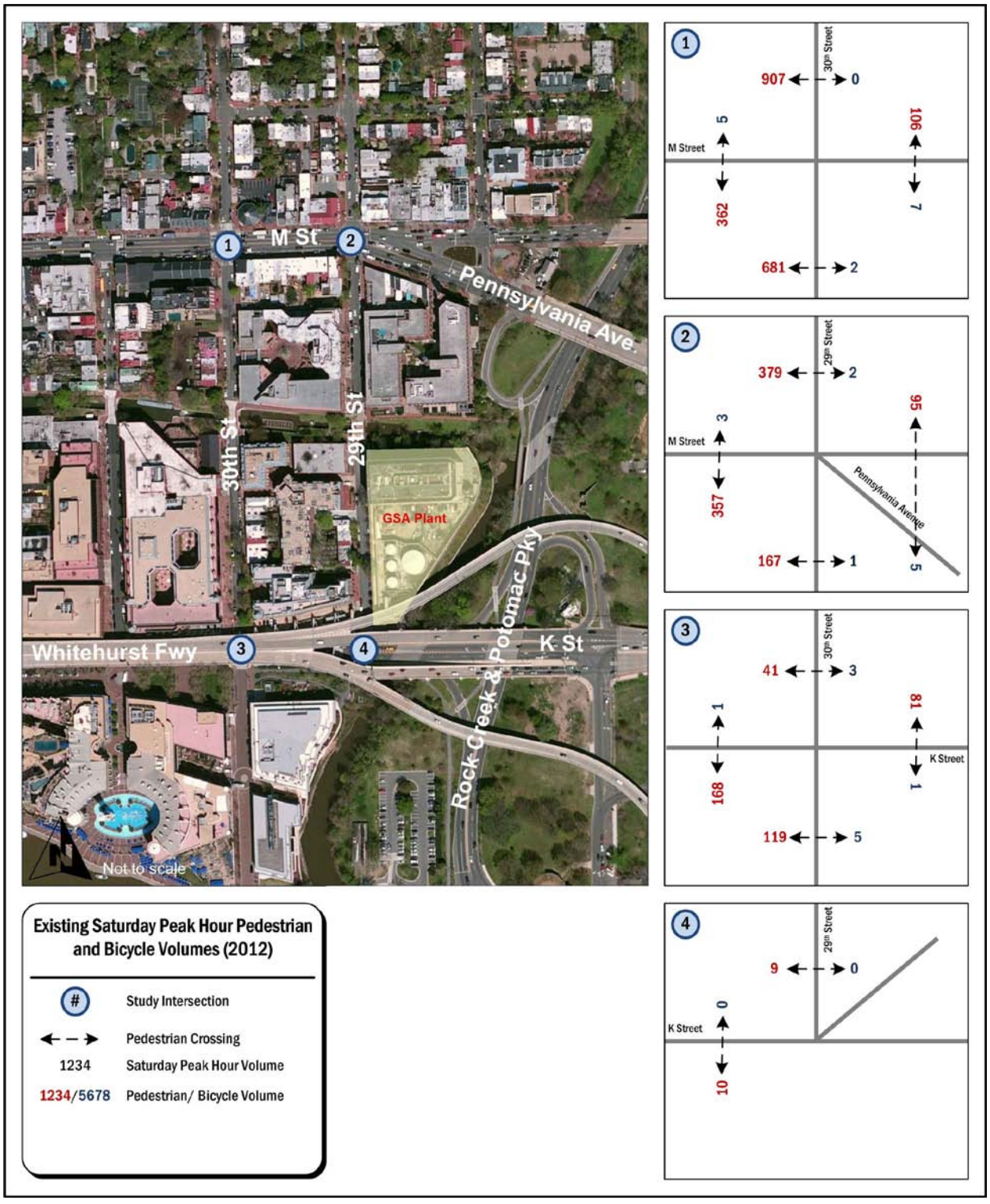


Figure 3-7 Existing Saturday Peak Hour Pedestrian and Bicycle Volumes.



Existing Traffic Observations

Along M Street, NW, the two lanes carrying eastbound and westbound traffic could process the traffic in all analyzed time periods (Wednesday, April 12, 2012 during peak periods and Saturday evening, April 15, 2012 as noted above); however, the lack of left turning storage lanes required the through traffic to wait until the left turning traffic cleared. As the number of vehicles waiting to make a left turn increased, the delay for all through traffic increased. In addition, it was observed at the M Street, NW intersection with 30th Street, NW that when both the eastbound and westbound approaches had a left turning vehicle, the sight distance for both was blocked, increasing the risk of an incident from a moving vehicle traveling in the opposing M Street, NW right lane.

Along K Street, NW, there were some illegal left turning moves at the 29th Street, NW intersection with K Street, NW. Vehicles were recorded as turning left at the K Street, NW westbound approach onto the Rock Creek and Potomac Parkway southbound on-ramp, almost requiring a U-turn to complete the move. In addition, vehicles were recorded as turning left from the 29th Street, NW southbound approach onto K Street, NW eastbound or the Rock Creek southbound on-ramp. Visible "no left turn" signs are posted restricting these moves at both approaches. It was also observed that vehicles waited in a queue behind a road closed sign along the Rock Creek and Potomac Parkway southbound on-ramp, starting 10-15 minutes before 6:30 PM, the time when the ramp opens. This queue backed up into the 29th Street, NW intersection, requiring all K Street, NW through traffic to use the left lane to pass.

Table 3-2 AM and PM Peak Hour Weekday Existing Intersection Analysis.

	Intersection	Lane Group/ Approach	AM Peak Hour (8:30 AM to 9:30 AM) V/C Ratio	AM Delay (seconds)	AM LOS	PM Peak Hour (5:00 PM to 6:00 PM) V/C Ratio	PM Delay (seconds)	PM LOS
1	**M Street NW/30th Street NW**							
	Eastbound (M Street)	L	1.03	160.9	F	1.87	488.2	F
	Eastbound (M Street)	T	–	242.5	F	–	88.8	F
	Eastbound (M Street)	R	1.51	246.4	F	0.83	20.2	C
	Westbound (M Street)	L	1.00	149.4	F	1.17	208.3	F
	Westbound (M Street)	T	–	23.6	C	–	58.6	E
	Westbound (M Street)	R	0.58	8.8	A	1.00	45.5	F
	Southbound (30th Street)	LTR	0.71	51.0	D	0.62	42.5	D
	Intersection			**167.9**	**F**		**69.9**	**E**
2	**M Street NW/29th Street NW**							
	Eastbound (M Street)	L	0.76	12.6	B	0.43	8.2	A
	Eastbound (M Street)	T	–	13.0	B	–	8.6	A
	Eastbound (M Street)	R	0.76	13.4	B	0.44	8.9	A
	Westbound (M Street)	L	0.25	25.3	C	0.08	11.6	B
	Westbound (M Street)	T	0.28	5.1	A	0.42	7.9	A
	Westbound (M Street)	R	0.06	4.1	A	0.15	6.2	A
	Northbound (29th Street)	LTR	0.26	36.4	D	0.39	36.0	D
	Southbound (29th Street)	LTR	0.59	47.2	D	0.30	34.4	C
	Intersection			**13.5**	**B**		**10.7**	**B**
3	**K Street NW/30th Street NW**							
	Eastbound (K Street)	EB-TR	0.43	17.1	C	0.68	25.1	D
	Westbound (K Street)	WB-L	0.12	11.4	B	0.05	11.6	B
	Westbound (K Street)	WB-T	0.83	37.1	E	0.37	15.2	C
	Northbound (30th Street)	NB-LTR	0.08	12.8	B	0.31	15.0	B
	Southbound (30th Street)	SB-L	0.41	17.5	C	0.43	17.6	C
	Southbound (30th Street)	SB-TR	0.40	15.1	C	0.28	12.9	B
4	**K Street NW/29th Street NW**							
	Eastbound (K Street)	EB-L	0.04	10.6	B	0.05	9.5	A
	Eastbound (K Street)	EB-T	0.45	15.5	C	0.54	15.6	C
	Westbound (K Street)	WB-TR	1.30	64.6	F	0.66	20.8	C
	Westbound (Rock Creek Ramp)	WB-TR	0.47	15.4	C	Ramp Closed		
	Southbound (29th Street)	SB-R	0.05	10.3	B	0.12	9.8	A

Notes:

LOS = Level of Service

LTR = left/thru/right lanes

V/C Ratio = Volume to capacity ratio

Delay is measured in seconds per vehicle.

Shaded areas denote intersections with LOS E or F.

Unsignalized intersections do not have an overall vehicle delay or LOS.

Table 3-3 Saturday Peak Hour Existing Intersection Analysis.

Intersection		Lane Group/ Approach	Saturday PM Peak Hour (7:00 PM to 8:00 PM)		
			V/C Ratio	Delay (seconds)	LOS
1	**M Street NW/30th Street NW**				
	Eastbound (M Street)	L	1.02	161.3	F
	Eastbound (M Street)	T	–	41.6	D
	Eastbound (M Street)	R	0.95	31.9	C
	Westbound (M Street)	L	3.06	1010.8	F
	Westbound (M Street)	T	–	230.5	F
	Westbound (M Street)	R	0.79	15.0	B
	Southbound (30th Street)	LTR	0.51	45.3	D
	Intersection			**132.6**	**F**
2	**M Street NW/29th Street NW**				
	Eastbound (M Street)	L	0.42	7.7	A
	Eastbound (M Street)	T	–	7.9	A
	Eastbound (M Street)	R	0.43	8.2	A
	Westbound (M Street)	L	0.02	9.9	A
	Westbound (M Street)	T	0.44	7.5	A
	Westbound (M Street)	R	0.18	6.0	A
	Northbound (29th Street)	LTR	0.11	32.7	C
	Southbound (29th Street)	LTR	0.46	41.5	D
	Intersection			**9.7**	**A**
3	**K Street NW/30th Street NW**				
	Eastbound (K Street)	EB-TR	0.68	25.1	D
	Westbound (K Street)	WB-L	0.12	11.9	B
	Westbound (K Street)	WB-T	0.51	17.9	C
	Northbound (30th Street)	NB-LTR	0.15	13.2	B
	Southbound (30th Street)	SB-L	0.41	17.3	C
	Southbound (30th Street)	SB-TR	0.33	14.0	B
4	**K Street NW/29th Street NW**				
	Eastbound (K Street)	EB-L	0.04	10.0	A
	Eastbound (K Street)	EB-T	0.60	18.4	C
	Westbound (K Street)	WB-TR	0.83	34.4	D
	Westbound (Rock Creek Ramp)	WB-TR	0.20	11.1	B
	Southbound (29th Street)	SB-R	0.04	10.0	A

Notes:
LOS = Level of Service
LTR = left/thru/right lanes
V/C Ratio = Volume to capacity ratio
Delay is measured in seconds per vehicle.
Shaded areas denote intersections with LOS E or F.
Unsignalized intersections do not have an overall vehicle delay or LOS.

3.5.2 No-Action Alternative

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel, and current uses of the site would continue. GSA would continue to maintain the parcel in a caretaker status, and there would not be any future redevelopment of the site. Existing condition data and analysis of existing roadways provide a baseline for evaluating the roadways serving the West Heating Plant parcel and analyzing the No-Action Alternative. Analysis of impacts under the No-Action Alternative assumes background development and growth through the year 2017, which is when the projected future development is expected to occur (see Section 3.4.2). To analyze impacts for the No-Action Alternative, roadway improvements and land use change assumptions were determined through 2017. These assumptions directly affect the amount of traffic assigned to the roadway network.

DDOT does not plan any roadway improvements or modifications for the study area intersections (Personal Communication, DDOT, 2012b and c); therefore, only land use changes are included in the No-Action Alternative analysis. The bridge over the C&O Canal will reopen later in 2012; therefore, future scenarios will treat 29th Street, NW between K and M Streets, NW as a through street. To account for the bridge being closed, the number of vehicles making a left from 30th Street and then making the next left onto 29th Street was counted. This move represents the number of vehicles that would potentially use 29th Street if the bridge were open. Because through traffic volumes between 2007 and 2009 showed insignificant growth, DDOT concurred that an annual growth factor would not be necessary for this study (Personal Communication, DDOT, 2012b and c).

Trip Generation

The latest release of the Institute of Transportation Engineers (ITE) Trip Generation Manual was used to determine the trip generation rates for all alternatives. The ITE Trip Generation Manual provides an estimate of the total number of trips generated by proposed land use, broken down into AM weekday, PM weekday, and Saturday peak hour volumes. In addition, directional distributions and pass-by percentages are provided to avoid counting an existing trip (for example, a trip already accounted for in the existing conditions destined for a grocery store that would also stop at a proposed gas station). These rates assume parking is available for all new trips and all trips generated would use a vehicle. To account for a modal split (vehicle/transit) the 2009 WMATA Transit Ridership Trends and Markets report reported a modal split for the study area between 25-50 percent for residential uses and greater than 25 percent for office. To be conservative and consistent, a 75/25 percent vehicle/transit modal split was assumed for this study.

Two nearby developments opening by 2017 would add background vehicle trips to the study area. Both developments are located south of K Street, NW between Thomas Jefferson and 31st Street, NW. One development is replacing 6,000 SF of office space with a quality restaurant and adding a new 10,000 SF ice skating rink and the other is a luxury hotel that comprises 48 suites. To incorporate these background trips, the ITE Trip Generation Manual's office, quality restaurant, ice skating rink, and hotel-all suites were used. Since the "hotel–all suites" category

does not provide a Saturday trip rate, the general hotel (ITE code 310) category was used for Saturday.

Based on the ITE Trip Generation Manual, the total AM peak hour trips would be 7, broken down into two trips entering the site and five trips leaving the site. These trips were reduced from a total of 9 to account for a 75/25 percent modal split. The total PM peak hour trips would be 60, broken down into 28 trips entering the sites and 17 trips leaving the sites. These trips were reduced from a total of 80 to account for a 75/25 percent modal split. The Saturday peak hour trips would be 97 trips, broken down into 39 trips entering the site and 36 trips leaving the site. These trips were reduced from a total of 129 to account for a 75/25 percent modal split. The quality restaurant pass-by trips account for 44 percent of the total PM peak hour trips. Tables 3-4 and 3-5 show the trip generation under the No-Action Alternative.

Table 3-4 No-Action Alternative Weekday Peak Hour Trip Generation.

Description/ITE Code	Units	Expected Units	Total Trips	AM Hour	PM Hour	Weekday Distribution of Generated Trips					
						AM In	AM Out	Pass-By	PM In	PM Out	Pass-By
General Office 710*	KSF2	6,000	-14	-7	-7	-6	-1	0	-1	-6	0
Quality Restaurant 931	KSF2	6,000	34	NA	34	NA	NA	NA	13	6	15
Ice Skating Rink 465	KSF2	10,000	18	NA	18	NA	NA	NA	9	9	0
Hotel - All Suites 311	DU	48	29	14	15	8	6	0	7	8	0
TOTAL TRIPS			**67**	**7**	**60**	**2**	**5**	**0**	**28**	**17**	**15**

*General office is being replaced by a quality restaurant

Table 3-5 No-Action Alternative Saturday Peak Hour Trip Generation.

Description/ITE Code	Units	Expected Units	Total Trips	Saturday Distribution of Generated Trips		
				In	Out	Pass-By
General Office* 710	KSF2	6,000	-2	-1	-1	0
Quality Restaurant 931	KSF2	6,000	49	16	11	22
Ice Skating Rink 465	KSF2	10,000	18	8	10	0
Hotel 310#	DU	48	32	16	16	0
TOTAL TRIPS			**97**	**39**	**36**	**22**

*General office is being replaced by a quality restaurant

Saturday trip rates not provided for hotel-suites, so the general hotel rates were used

Trip Distribution

The existing conditions do not cover the 31st Street or Thomas Jefferson Street intersections along K Street, NW; therefore, a hybrid approach was used to distribute the trips. Using the 2004 Coal House Garage Traffic Impact Study, the Thomas Jefferson Street intersection with K Street, NW AM and PM turning movements were used to establish the percentage of vehicles turning right and heading eastbound along K Street, through the 30th and 29th Streets along K

Street, NW. The PM turning movements were also used to calculate the Saturday peak hour percentage of vehicles turning right on K Street, NW. The existing condition 30th Street, NW intersection at K Street AM, PM, and Saturday turning movement counts from this study were used to calculate the traffic flows destined to the two developments headed westbound through 29th and 30th Streets along K Street, NW.

Since the 29th Street Bridge, NW is currently closed for reconstruction, the number of vehicles making a left from 30th Street, NW and then making the next left onto 29th Street, NW was counted. This move represents the number of vehicles that would potentially use 29th Street, NW if the bridge were open. According to the counts obtained, there were zero AM or Saturday peak period vehicles making this move, but there were seven vehicles during the PM peak hour making this move. To account for this, seven trips were removed from the network at 30th Street, NW intersection with M Street, NW headed southbound, 30th Street, NW intersection with K Street, NW headed eastbound, and 29th Street, NW intersection with K Street, NW headed northbound. These were added to the 30th Street, NW intersection with M Street, NW headed eastbound and 29th Street, NW intersection with M Street, NW headed southbound. Figure 3-8 illustrates the No-Action Alternative AM and PM Peak background trip distribution, and Figure 3-9 illustrates the No-Action Alternative background Saturday trip distribution.

Traffic Operations

Based on the analysis using the Synchro Traffic Software HCM 2010 signalized intersection analysis, the 30th Street, NW intersection with M Street, NW would operate at an overall LOS F (over a two minute delay per vehicle) during the AM peak hour (See Table 3-6). The longest delay would occur along the eastbound approach, with a three minute delay per vehicle. During the PM peak hour, the 30th Street, NW intersection with M Street, NW would operate with an overall LOS E (over a 65 second average delay per vehicle). The longest delay would occur along the eastbound left lane approach with an eight minute average delay per vehicle. The 29th Street, NW intersection with M Street, NW would operate at an overall LOS B during both AM and PM peak periods, with just over a 15 second delay per vehicle.

During the Saturday peak hour, the 30th Street, NW intersection with M Street, NW would operate with an overall LOS F, with over a two minute average delay per vehicle. The longest delay would occur along the westbound M Street, NW left lane, with over a 16 minute delay per vehicle. The 29th Street, NW intersection with M Street, NW would operate with an overall LOS A.

Based on the analysis using the Synchro Traffic Software HCM 2010 unsignalized intersection analysis, the 30th Street, NW intersection with K Street, NW approaches would operate at LOS C or better during the AM weekday peak hour, except for the K Street, NW westbound through movement, which operates at LOS F resulting from a 37 second average delay per vehicle. The PM weekday peak hour and Saturday peak hour operates at LOS D or better for all approaches. The 29th Street, NW intersection with K Street, NW operates at C or better during the AM weekday peak hour, except for the K Street, NW westbound through movement, which operates at LOS F resulting from a 65 second average delay per vehicle. The PM weekday peak hour operates at LOS C or better and the Saturday peak hour operates at LOS C or better, except the K

Street, NW westbound through movement, which would operate at LOS E resulting from a 42 second average delay per vehicle. The Rock Creek and Potomac Parkway southbound off ramp is closed during the PM peak hour, as Rock Creek and Potomac Parkway operates in the northbound direction only.

Figure 3-8 No-Action Alternative AM and PM background Trip Distribution.

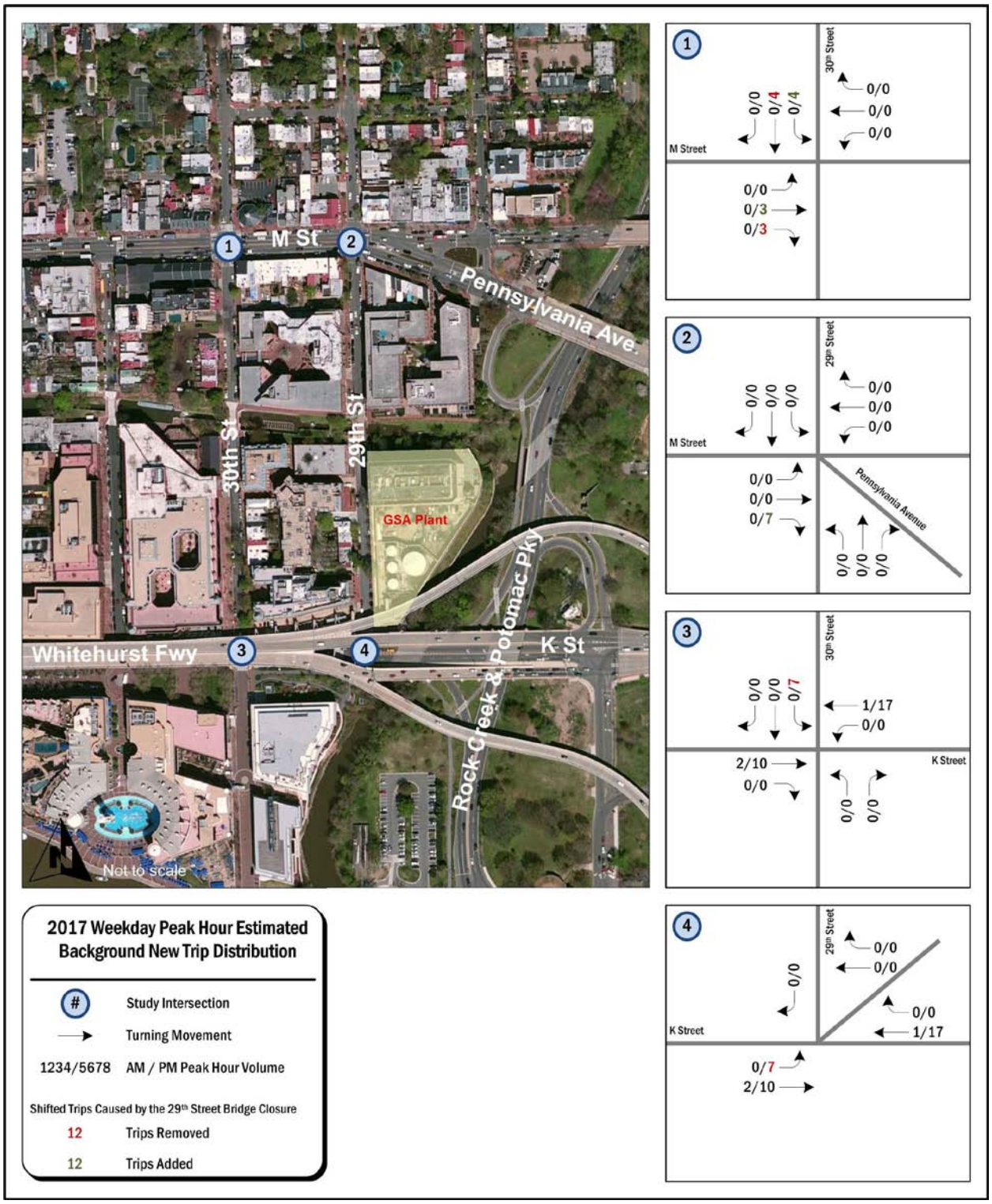
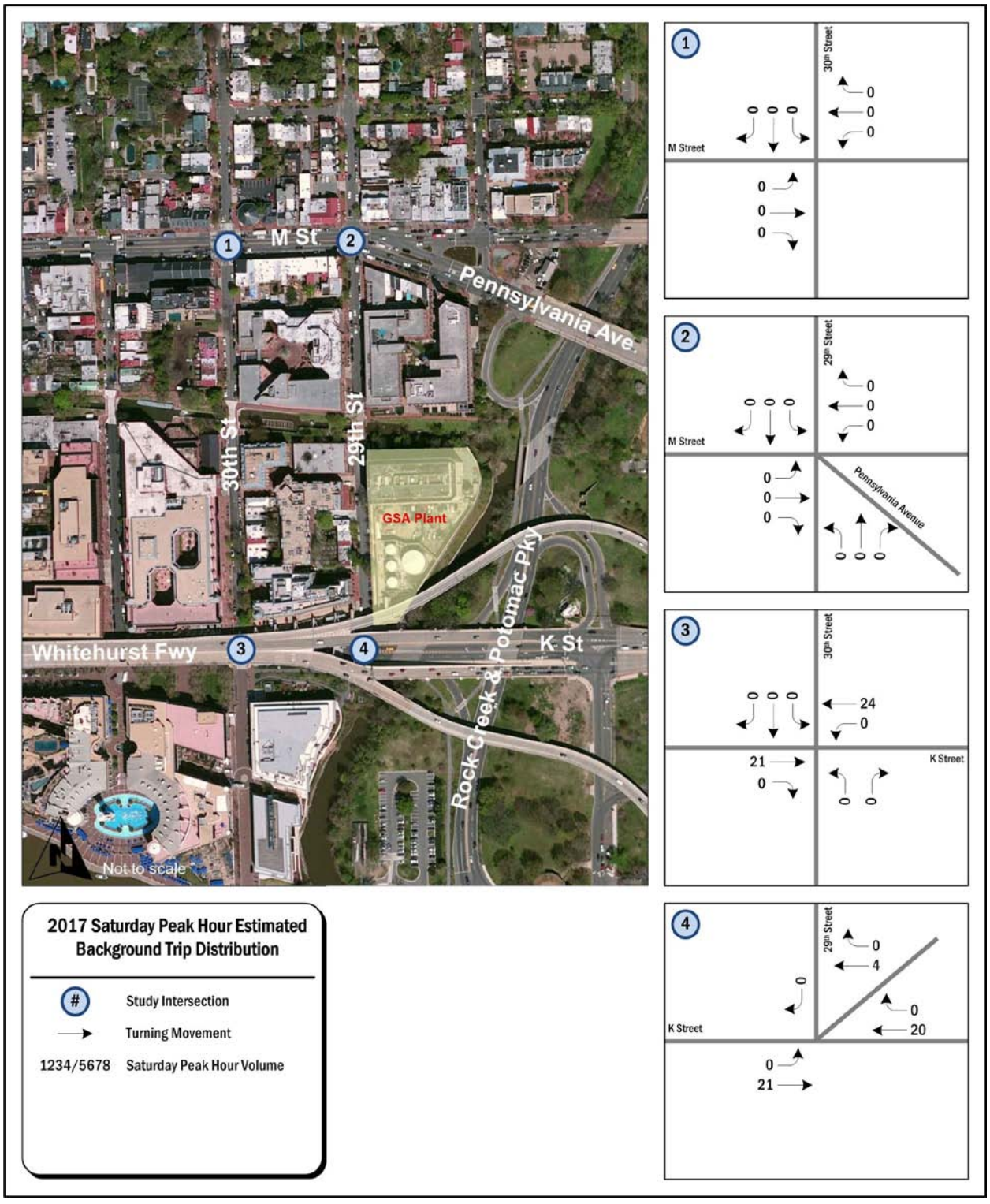


Figure 3-9 No-Action Alternative Saturday Background Trip Distribution.



3.5.3 Potential Impacts from the Disposal Alternative

Disposal Alternative – Direct Impacts

There would be no direct impacts to traffic and transportation from disposal of the West Heating Plant parcel, but there could be indirect impacts related to future redevelopment of the site after disposal has occurred, as described below.

Disposal Alternative – Indirect Impacts

Trip Generation

As discussed earlier in Chapter 3, the reasonably foreseeable development scenario was established within the framework of W-2 zoning to identify the potential indirect impacts of the Disposal Alternative for a scenario representing the highest level of allowable use of the property. The after-disposal land use is assumed to consist of 36,600 SF of a restaurant using two floors from the existing building (smaller top floor and bottom floor) and the remainder of the non-residential use divided evenly between office and specialty retail uses. Condos/ townhouses are assumed to use the other 50 percent of the existing building (71,800 SF), plus an additional 109,410 SF on the remainder of the site. This would break down into 72,305 SF of general office, 72,305 SF of specialty retail, and 181 dwelling units of residential condos or townhouses (assuming 1,000 SF per dwelling unit; Personal Communication, DCOP, 2012a).

The ITE Trip Generation Manual was used to calculate the total new trips that would be generated based on these assumed uses. To be consistent with the development of the No-Action Alternative, a 75/25 percent vehicle/transit modal split was assumed. In addition, the ITE manual did not provide a specialty retail Saturday peak hour rate or pass-by percentage; therefore, the study used the shopping center (ITE code 820) Saturday peak hour rate and shopping center pass-by rate for weekday and Saturday trips to account for an urban retail shopping area attraction.

Based on the ITE Trip Generation Manual, the total AM peak hour trips would be 515, broken down into 202 trips entering the site, 187 trips leaving the site, and 126 pass-by trips. These trips were reduced from a total of 687 to account for a 75/25 percent modal split. The total PM peak hour trips would be 504, broken down into 182 trips entering the site, 181 trips leaving the site, and 141 pass-by trips. These trips were reduced from a total of 671 to account for a 75/25 percent modal split. The Saturday peak hour trips would be 653 trips, broken down into 239 trips entering the site, 193 trips leaving the site, and 221 pass-by trips. These trips were reduced from a total of 870 to account for a 75/25 percent modal split. The West Heating Plant existing trips are nominal and, therefore, are not included as a reduction in trips. Table 3-6 shows the Disposal Alternative AM and PM weekday trip generation from the RFDS, and Table 3-7 shows the Disposal Alternative Saturday trip generation.

Table 3-6 2017 Disposal Alternative AM and PM Weekday Trip Generation.

Description/ITE Code	Units	Expected Units	Total Trips	AM Hour	PM Hour	Weekday Distribution of Generated Trips					
						AM In	AM Out	Pass-By	PM In	PM Out	Pass-By
Condo/Townhouse 230	DU	181	142	60	71	10	50	0	48	23	0
General Office 710	KSF2	72,305	160	84	80	74	10	0	14	66	0
Specialty Retail Center 814	KSF2	72,305	518	371	147	118	127	126	43	54	50
Quality Restaurant 9 31	KSF2	36,600	412	NA	206	NA	NA	NA	77	38	91
TOTAL TRIPS			**1,232**	**515**	**504**	**202**	**187**	**126**	**182**	**181**	**141**

Table 3-7 2017 Disposal Alternative Saturday Trip Generation.

Description/ITE Code	Units	Expected Units	Total Trips	Saturday Distribution of Generated Trips		
				In	Out	Pass-By
Condo/Townhouse 230	DU	181	64	35	29	0
General Office 710	KSF2	72,305	23	12	11	0
Shopping Center* 820	KSF2	72,305	269	93	85	91
Quality Restaurant 931	KSF2	36,600	297	99	68	130
TOTAL TRIPS			**653**	**239**	**193**	**221**

*Trip rates not availble for Saturday peak period; therefore shopping center rates used

Trip Distribution

Because the existing condition counts were obtained during a period when the 29th Street Bridge was closed, traffic counts from a previous study at the intersection of 29th and K Street, NW were used to calculate the direction distribution. Based upon the 2004 Coal House Garage Traffic Impact Study, 29th Street, NW had a 71 percent/29 percent northbound/southbound directional split during the AM peak hour and a 61 percent/39 percent northbound/southbound directional split during the PM peak hour. The traffic study used these directional splits for AM and PM weekday distribution models and in addition, used the PM directional split for modeling the Saturday distribution. Because there were no recent turning movement volumes at the 29th and M Street, NW intersection and the traffic control for that intersection was different when the 2004 study obtained the counts, the Disposal Alternative trip distribution was calculated from this study's existing volumes. In addition, the study assumed that vehicles destined to or from the West Heating Plant site would not use 30th Street between K and M Street, NW because 29th Street would provide a more direct route. Figure 3-10 illustrates the Disposal Alternative AM and PM estimated weekday new trip distribution; Figure 3-11 illustrates the Disposal Alternative Saturday estimated new trip distribution.

Figure 3-10 2017 Disposal Alternative AM and PM Estimated Weekday New Trip Distribution.

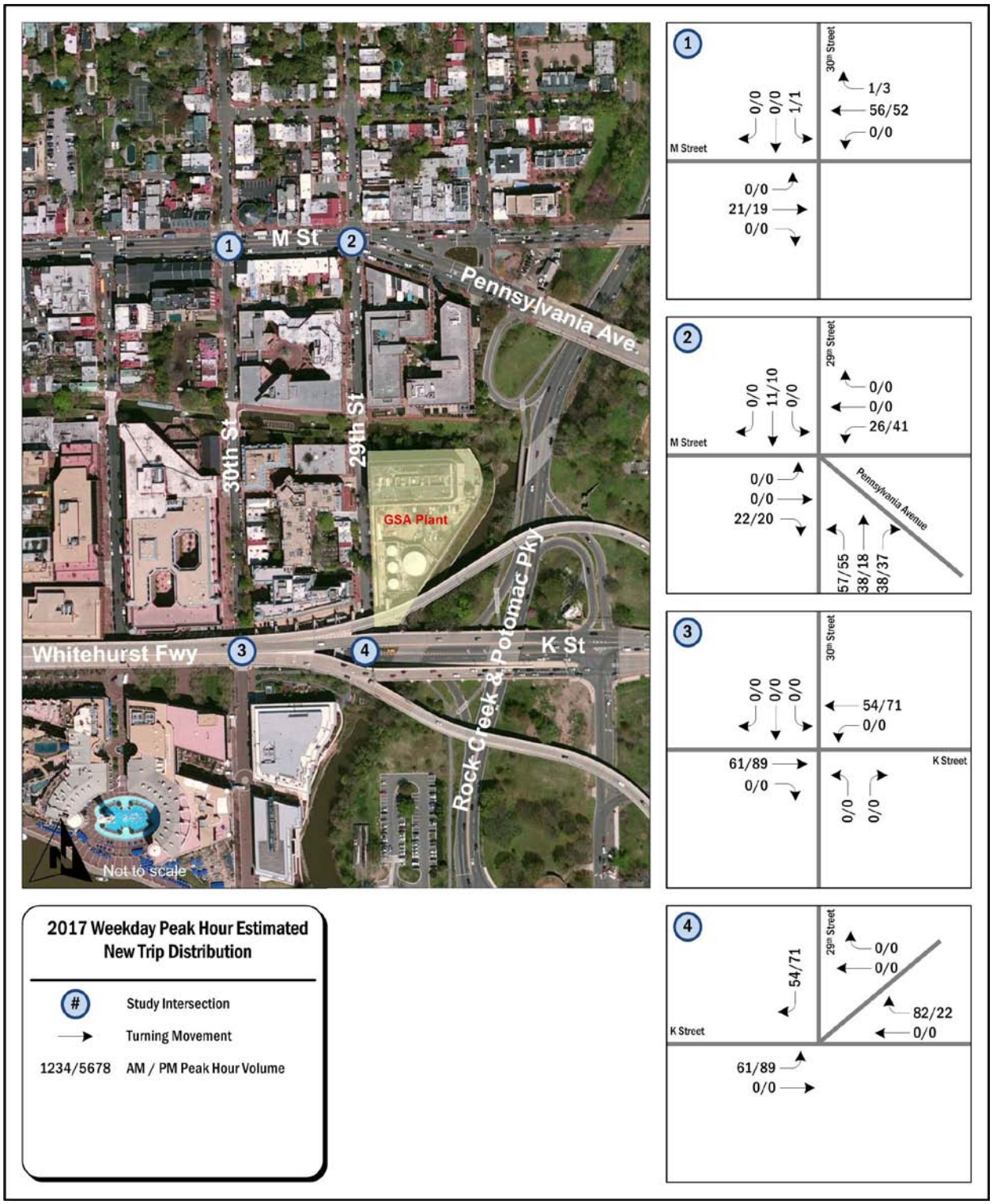
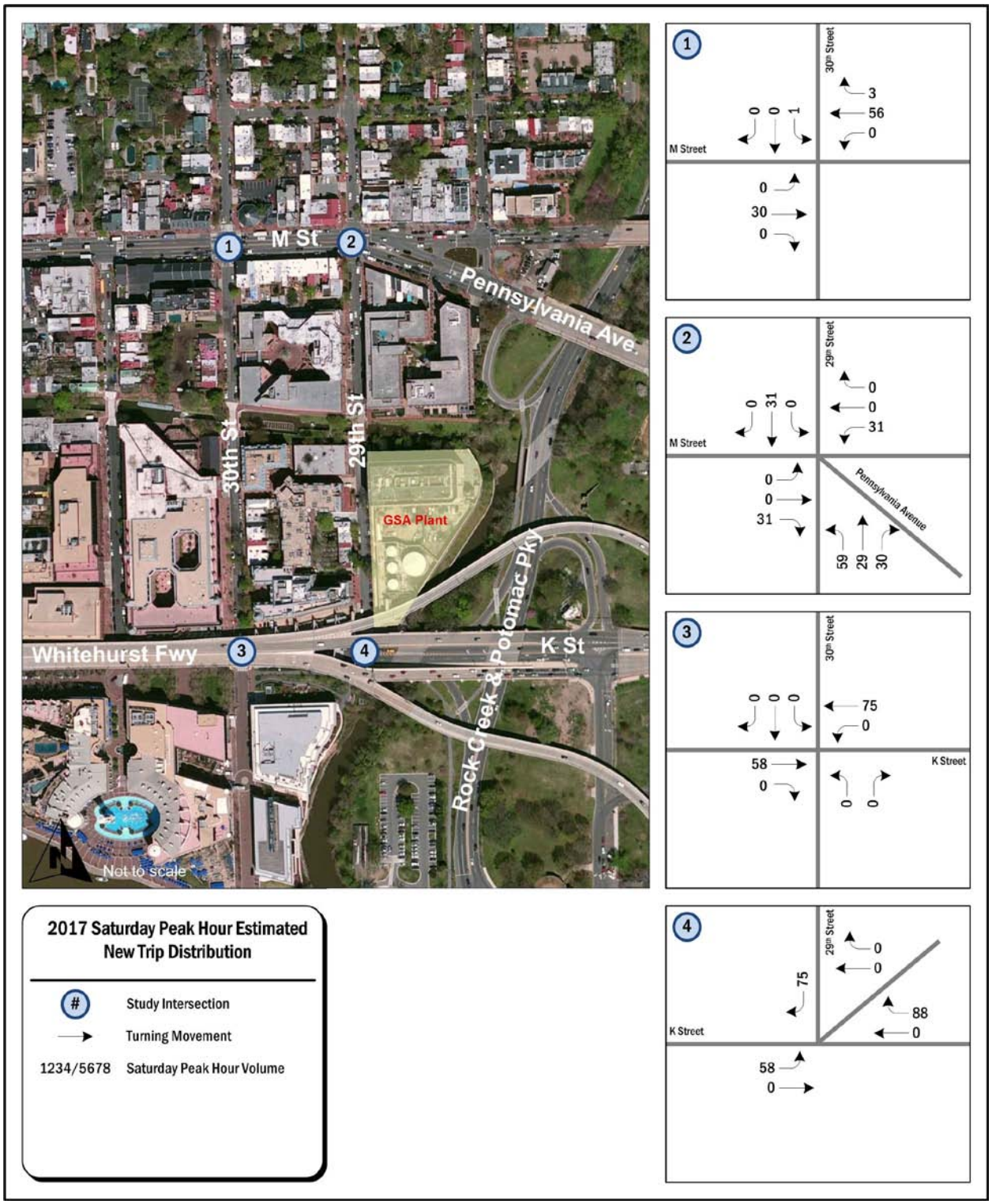


Figure 3-11 2017 Disposal Alternative Saturday Estimated New Trip Distribution.



Traffic Operations

Comparison of the No-Action Alternative and Disposal Alternative intersection analysis are discussed below and presented in Tables 3-8, 3-9, and 3-10.

30th Street at M Street, **NW (Study Area Intersection 1):** Based on the analysis using the Synchro Traffic Software HCM 2010 signalized intersection analysis, the 30th Street intersection with M Street, NW would operate at an overall LOS F during the AM peak hour for the Disposal Alternative. The delay under the Disposal Alternative would be 13 seconds more than under the No-Action Alternative. During the PM peak hour, the intersection would continue to operate at LOS E, with a six second increase in delay under the Disposal Alternative. During the Saturday peak hour the intersection would continue to operate at LOS F, with a three second increase in delay from the No-Action Alternative to the Disposal Alternative. Based on this analysis, the disposal of the West Heating Plant site would have a negligible indirect impact on 30th and M street, NW intersection.

29th Street at M Street, **NW (Study Area Intersection 2):** The 29th Street intersection with M Street, NW would operate at an overall LOS C during the AM peak hour for the Disposal Alternative, down from LOS B. The major factor for this change would be in the new vehicle trips added to the 29th Street northbound approach experiencing a two plus minute average delay. The difference between the No-Action Alternative and Disposal Alternative would be an increased delay of 16 seconds. During the PM peak hour, the intersection would operate at an overall LOS C, down one LOS letter from the No-Action Alternative (LOS B). The additional vehicle trips added to the 29th Street northbound approach from the West Heating Plant site would be the cause of this LOS change. The difference between the No-Action Alternative and Disposal Alternative would be an increase of 14 seconds in delay. The Saturday peak hour would change from LOS A to B, due to the same factor affecting the AM and PM peak hour LOS ratings. Based on the analysis, the disposal of the West Heating Plant site because of the potential redevelopment would have a moderate indirect long-term impact to vehicular traffic along the 29th Street, NW northbound approach.

30th Street at K Street, **NW (Study Area Intersection 3):** Based on the analysis using the Synchro Traffic Software HCM 2010 unsignalized intersection analysis, the westbound through-move at the 30th Street intersection with K Street, NW approach during the AM peak hour would change from LOS E to an F, reflecting the new trips exiting the West Heating Plant site. During the PM peak hour, the eastbound K Street, NW through approach would change from LOS D to F, reflecting the new trips headed to the West Heating Plant site. Both of these LOS changes would be the result of new trips headed to and from the West Heating Plant. During the Saturday peak hour, both K Street through moves would change from LOS D to E, resulting from just under a 15second increase in average vehicle delay caused by the new vehicle trips added for the Disposal Alternative. Based on the analysis, future development of the West Heating Plant parcel, after disposal has occurred, would have a moderate indirect impact on this intersection; causing a long-term adverse effect of increased delays along K Street, especially in the eastbound direction during the PM and Saturday peak hour.

29th Street at K Street, **NW (Study Area Intersection 4):** The 29th Street intersection with K Street, NW would not change from the No-Action Alternative to the Disposal Alternative during the AM peak hour; however, there would be some changes during the PM peak hour. Specifically, the K Street eastbound left lane approach would change from LOS A to B, the K Street westbound through approach would change from LOS C to D, and the 29th Street southbound approach would change from LOS A to B. The change in these LOS' would be the result of new trips to and from the West Heating Plant, causing K Street through moves to stop for longer periods of time to allow the vehicles along 29th Street to enter the intersection. During the Saturday peak hour, the K Street westbound through approach would change from a LOS E to F (more than a 25 second average increase in delay per vehicle difference). All other approaches would continue to have the same LOS for the reasonably foreseeable development scenario as the No-Action Alternative. Based on the analysis, the disposal of the West Heating Plant would have a minor indirect impact on this intersection; causing a long-term adverse effect of increased delays for vehicular traffic along K Street, primarily during the Saturday peak hour in the westbound direction.

Pedestrian, Transit, Parking

The indirect pedestrian impacts for the Disposal Alternative would be minimal as the increase in traffic along K, M, and 29th Streets would not impact pedestrians crossing at the intersections, nor impact their access to the surrounding street network. The loss of parking spaces along 29th Street due to the proposed West Heating Plant redevelopment could impact the number of on-street parking spaces due to potential loading zones, valet zones, or other restricted zones prohibiting parking. The circulator bus routes along K and M Street as well as the other scheduled bus routes along M Street might experience some delays as a result of the increased traffic through the K and M Street corridors.

Summary

The Disposal Alternative would have negligible to moderate long-term, indirect impacts to area intersections, primarily during peak hours, including Saturday peak hours. Intersections that are already failing would incur additional seconds of delay. As noted above, any future private developer would likely be required to apply for zoning or undertake a PUD approval process, at which time DDOT would be able to require the developer prepare a more rigorous transportation impact study. The scope of the transportation impact study would be determined by DDOT, depending upon the actual redevelopment proposal. DDOT at their discretion may require the developer to include additional intersections in the transportation study. DDOT would use the more rigorous transportation study conducted by the developer to determine specific mitigation measures.

Table 3-8 No-Action Alternative and Disposal Alternative AM Peak Hour Intersection Analysis.

AM Weekday Peak Hour								
			Disposal Alternative RFDS			No-Action Alternative		
	Intersection	Lane Group/ Approach	V/C Ratio	Delay (seconds)	LOS	V/C Ratio	Delay (seconds)	LOS
1	**M Street NW/30th Street NW**							
	Eastbound (M Street NW)	L	1.08	178.1	F	1.18	223.7	F
	Eastbound (M Street NW)	T	–	241.9	F	–	214.6	F
	Eastbound (M Street NW)	R	1.50	244.9	F	1.43	214.2	F
	Westbound (M Street NW)	L	1.03	165.3	F	1.14	207.9	F
	Westbound (M Street NW)	T	–	24.6	C	–	28.7	C
	Westbound (M Street NW)	R	0.63	9.5	A	0.56	7.7	A
	Southbound (30th Street NW)	LTR	0.74	56.0	E	0.81	69.4	E
	Intersection			**165.5**	**F**		**152.6**	**F**
2	**M Street NW/29th Street NW**							
	Eastbound (M Street NW)	L	0.81	17.0	B	0.79	15.8	B
	Eastbound (M Street NW)	T	–	17.6	B	–	16.3	B
	Eastbound (M Street NW)	R	0.82	18.3	B	0.79	16.7	B
	Westbound (M Street NW)	L	0.51	48.3	D	0.28	32.1	C
	Westbound (M Street NW)	T	0.30	6.4	A	0.30	6.4	A
	Westbound (M Street NW)	R	0.07	5.2	A	0.07	5.2	A
	Northbound (29th Street NW)	LTR	1.15	137.6	F	0.27	34.6	C
	Southbound (29th Street NW)	LTR	0.67	51.8	D	0.53	42.7	D
	Intersection			**31.8**	**C**		**15.7**	**B**
3	**K Street NW/30th Street NW**							
	Eastbound (K Street NW)	EB-TR	0.55	21.3	C	0.43	17.3	C
	Westbound (K Street NW)	WB-L	0.13	11.8	B	0.12	11.4	B
	Westbound (K Street NW)	WB-T	0.93	54.0	F	0.83	37.3	E
	Northbound (30th Street NW)	NB-LTR	0.08	13.4	B	0.08	12.8	B
	Southbound (30th Street NW)	SB-L	0.44	18.8	C	0.42	17.6	C
	Southbound (30th Street NW)	SB-TR	0.41	16.3	C	0.39	15.1	C
4	**K Street NW/29th Street NW**							
	Eastbound (K Street NW)	EB-L	0.19	12.5	B	0.04	10.6	B
	Eastbound (K Street NW)	EB-T	0.48	16.7	C	0.45	15.6	C
	Westbound (K Street NW)	WB-TR	1.61	66.7	F	1.30	64.6	F
	Westbound (Rock Creek Ramp)	WB-TR	0.51	17.1	C	0.47	15.4	C
	Southbound (29th Street NW)	SB-R	0.23	12.5	B	0.05	10.4	B

Notes:
LOS = Level of Service
LTR = left/thru/right lanes
V/C Ratio = Volume to capacity ratio
Delay is measured in seconds per vehicle.
Shaded areas denote intersections with LOS E or F.
Unsignalized intersections do not have an overall vehicle delay or LOS.

Table 3-9. No-Action Alternative and Disposal Alternative PM Peak Hour Intersection Analysis.

PM Weekday Peak Hour								
			Disposal Alternative RFDS			No-Action Alternative		
	Intersection	Lane Group/ Approach	V/C Ratio	Delay (seconds)	LOS	V/C Ratio	Delay (seconds)	LOS
1	**M Street NW/30th Street NW**							
	Eastbound (M Street NW)	L	1.91	506.4	F	1.91	506.4	F
	Eastbound (M Street NW)	T	–	89.3	F	–	89.8	F
	Eastbound (M Street NW)	R	0.82	19.4	B	0.80	18.2	B
	Westbound (M Street NW)	L	1.20	218.7	F	1.20	218.7	F
	Westbound (M Street NW)	T	–	64.1	E	–	50.1	D
	Westbound (M Street NW)	R	1.03	51.1	F	0.96	35.0	D
	Southbound (30th Street NW)	LTR	0.64	44.6	D	0.64	44.4	D
	Intersection			**72.8**	**E**		**66.5**	**E**
2	**M Street NW/29th Street NW**							
	Eastbound (M Street NW)	L	0.45	9.2	A	0.42	8.1	A
	Eastbound (M Street NW)	T	–	9.7	A	–	8.4	A
	Eastbound (M Street NW)	R	0.47	10.0	B	0.44	8.7	A
	Westbound (M Street NW)	L	0.24	15.8	B	0.07	11.3	B
	Westbound (M Street NW)	T	0.43	8.7	A	0.42	7.7	A
	Westbound (M Street NW)	R	0.13	6.7	A	0.13	5.9	A
	Northbound (29th Street NW)	LTR	1.08	116.7	F	0.04	37.2	D
	Southbound (29th Street NW)	LTR	0.31	33.7	C	0.03	35.3	D
	Intersection			**24.8**	**C**		**10.6**	**B**
3	**K Street NW/30th Street NW**							
	Eastbound (K Street NW)	EB-TR	0.90	51.2	F	0.70	26.5	D
	Westbound (K Street NW)	WB-L	0.05	12.2	B	0.05	11.6	B
	Westbound (K Street NW)	WB-T	0.69	20.1	C	0.39	15.7	C
	Northbound (30th Street NW)	NB-LTR	0.35	17.1	C	0.31	15.2	C
	Southbound (30th Street NW)	SB-L	0.45	19.9	C	0.42	17.5	C
	Southbound (30th Street NW)	SB-TR	0.31	14.7	B	0.28	13.1	B
4	**K Street NW/29th Street NW**							
	Eastbound (K Street NW)	EB-L	0.27	12.4	B	0.03	9.5	A
	Eastbound (K Street NW)	EB-T	0.61	18.9	C	0.56	16.2	C
	Westbound (K Street NW)	WB-TR	0.81	33.3	D	0.70	23.3	C
	Westbound (Rock Creek Ramp)	WB-TR	Ramp Closed			Ramp Closed		
	Southbound (29th Street NW)	SB-R	0.35	13.1	B	0.12	9.9	A

Notes:
LOS = Level of Service
LTR = left/thru/right lanes
V/C Ratio = Volume to capacity ratio
Delay is measured in seconds per vehicle.
Shaded areas denote intersections with LOS E or F.
Unsignalized intersections do not have an overall vehicle delay or LOS.

Table 3-10. No-Action Alternative and Disposal Alternative Saturday Peak Hour Intersection Analysis.

Saturday Peak Hour								
			Disposal Alternative RFDS			No-Action Alternative		
	Intersection	Lane Group/ Approach	V/C Ratio	Delay (seconds)	LOS	V/C Ratio	Delay (seconds)	LOS
1	**M Street NW/30th Street NW**							
	Eastbound (M Street NW)	L	1.02	161.3	F	1.02	161.3	F
	Eastbound (M Street NW)	T	–	32.2	C	–	30.0	C
	Eastbound (M Street NW)	R	0.89	22.1	C	0.86	19.4	B
	Westbound (M Street NW)	L	3.06	1010.8	F	3.06	1010.8	F
	Westbound (M Street NW)	T	–	218.0	F	–	228.7	F
	Westbound (M Street NW)	R	0.80	15.2	B	0.74	12.7	B
	Southbound (30th Street NW)	LTR	0.50	44.8	D	0.50	44.7	D
	Intersection			**123.6**	**F**		**126.4**	**F**
2	**M Street NW/29th Street NW**							
	Eastbound (M Street NW)	L	0.46	8.2	A	0.41	7.7	A
	Eastbound (M Street NW)	T	–	8.5	A	–	7.9	A
	Eastbound (M Street NW)	R	0.48	8.8	A	0.43	8.1	A
	Westbound (M Street NW)	L	0.12	12.2	B	0.02	13.8	B
	Westbound (M Street NW)	T	0.44	7.5	A	0.44	7.5	A
	Westbound (M Street NW)	R	0.16	5.8	A	0.16	5.8	A
	Northbound (29th Street NW)	LTR	0.85	65.0	E	0.12	32.8	C
	Southbound (29th Street NW)	LTR	0.58	45.4	D	0.46	41.6	D
	Intersection			**15.6**	**B**		**9.7**	**A**
3	**K Street NW/30th Street NW**							
	Eastbound (K Street NW)	EB-TR	0.86	42.9	E	0.72	28.3	D
	Westbound (K Street NW)	WB-L	0.12	12.5	B	0.12	12.1	B
	Westbound (K Street NW)	WB-T	0.65	24.6	C	0.54	19.2	C
	Northbound (30th Street NW)	NB-LTR	0.16	14.4	B	0.15	13.5	B
	Southbound (30th Street NW)	SB-L	0.45	19.4	C	0.42	17.8	C
	Southbound (30th Street NW)	SB-TR	0.36	15.5	C	0.34	14.3	B
4	**K Street NW/29th Street NW**							
	Eastbound (K Street NW)	EB-L	0.29	13.4	B	0.04	10.1	B
	Eastbound (K Street NW)	EB-T	0.69	24.2	C	0.64	20.1	C
	Westbound (K Street NW)	WB-TR	1.28	67.2	F	0.89	41.9	E
	Westbound (Rock Creek Ramp)	WB-TR	0.25	12.8	B	0.22	11.5	B
	Southbound (29th Street NW)	SB-R	0.29	13.2	B	0.05	10.2	B

Notes:
LOS = Level of Service
LTR = left/thru/right lanes
V/C Ratio = Volume to capacity ratio
Delay is measured in seconds per vehicle.
Shaded areas denote intersections with LOS E or F.
Unsignalized intersections do not have an overall vehicle delay or LOS.

3.5.4 Mitigation Measures for Transportation

Mitigation would not be required for disposal of the West Heating Plant parcel.

While none of the intersections studied would experience significant impacts requiring mitigation as defined under CEQ regulations, several mitigation measures are suggested for planning purposes as a result of indirect impacts from the Disposal Alternative. Suggested mitigation measures would be at the discretion of DDOT and would be the responsibility of the developer. For any future redevelopment of the site, DDOT would likely require the developer to prepare a more robust study to determine the actual mitigation measures to be implemented by the developer, once actual development plans have been determined.

Each intersection would be affected by the new trips added from the disposal of the West Heating Plant site. The 30th Street intersection with M Street, NW would operate at LOS F under either the No-Action Alternative or the Disposal Alternative; therefore, no mitigation is recommended. The 29th Street intersection at M Street, NW may be moderately impacted. According to the Synchro Traffic Software, upgrading both traffic signals to operate as fully actuated signals with detectors used to assign the green times to the approaches based on the demand, would result in the LOS of both intersections improving, and queues would shorten.

The 30th Street intersection with K Street, NW would be moderately impacted and a signal warrant analysis is recommended to determine if new traffic signals should be installed, based on the increase of vehicular trips through this intersection. A preliminary analysis in Synchro shows that a new signal would elevate this intersection to LOS A for all time periods. Another consideration would be to remove the stop signs at the 30th Street intersection with K Street, NW; however, the Whitehurst Freeway travels overhead potentially requiring a safety study to determine the potential impacts caused by the sight distances partially blocked by the Whitehurst Freeway columns.

Minor impacts to vehicular traffic could occur at 29th and K Street, NW. The No-Action Alternative would result in a near failing LOS for the K Street, NW westbound approach; therefore, mitigation is not recommended for the 25 second increase in delay with the Disposal Alternative. DDOT may require that the developer further study this intersection.

There is a proposed streetcar along K Street, NW that could shift more trips to transit beyond the 25 percent already assumed because of current accessibility to public transit. This would lower the new trips produced and improve the LOS for all study area intersections, especially the two K Street, NW intersections. This would of course change the traffic impacts assumed in this traffic proposal. DDOT would conduct their own studies to determine potential impacts from streetcar operations.

Due to the anticipated impacts and added trips from this scenario, DDOT would likely require a full range of TDM measures from any developer, should the site be redeveloped as assumed in this EA. The TDM measures include potential measures that could be required (see Table 3-11). Table 3-11 is a list of example TDMs for the category of a proposed development that requires a variance (or is a PUD or Campus Plan) and project generates more than 400 peak hour auto trips,

the category that best represents the Disposal Alternative with the RFDS. The minimal TDM measures expected are indicated in Column 1 below along with others that may be used as substitutes and/or above and beyond the minimum requirements. These expected measures were developed by reviewing TDM programs in other locations both in the greater District of Columbia region and nationally. DDOT encourages the adoption of measures above the minimum expected, and reserves the right to require additional measures beyond these minimal expectations as warranted.

Table 3-11 Example TDM Measures Extracted from TDM Guidelines for All District Development Proposals.

TDM Measure	Type of Guideline
During construction, maintain or coordinate relocation of any existing bus stops at the developer's expense.	**E**
Comply with zoning requirements to provide bicycle parking/storage facilities.	**E**
Require all parking costs be unbundled from the cost of lease or purchase. Parking costs must be set at no less than the charges of the lowest fee garage, located within ¼ mile.	**E**
Post all TDM commitments on-line, publicize availability, and allow the public to see what commitments have been promised.	**E**
Identify a project's TDM Leader (for planning, construction, and operations). Provide DDOT/Zoning Enforcement with annual TDM Leader contact updates.	**E**
Install a Transportation Information Center Display (kiosk) containing printed materials related to local transportation alternatives and maintain a stock of materials at all times.	**e**
Provide website links to CommuterConnections.com and goDCgo.com on developer and property management websites.	**e**
At no cost, dedicate spaces in the garage for car sharing services to use with right of first refusal. Locate spaces that are convenient to the garage entrance, available to the members of the car sharing service, twenty-four hours a day, seven days a week, without restrictions (the garage may be gated—members of the service would have access to the spaces via a key pad combination to a pass code system, or other similar device). Count the car sharing spaces towards the project's parking requirements.	**e** **2 spaces required**
Provide reserved spaces for carpools and vanpools that are conveniently located with respect to the elevators serving the buildings. Oversee a program to provide carpools and vanpools with a parking subsidy.	**e**
Provide secured bicycle parking/storage facilities (lockers, bicycle, valet parking, etc.)	**e**

TDM Measure	Type of Guideline
Contribute funding to available, non-exclusive Shuttle Service to Metro or DC Circulator (based on total number of trips generated). Only applies to developments not considered Transit Oriented Developments by DDOT.	e*
Provide an on-site business center to residents with access to copier, fax, and internet services.	e
Provide location for Bikeshare Program Station/Kiosk.	e
Provide Ongoing Funding for on-site Bikeshare Program.	e
Provide each new resident with 1-year subscription to DC Bikesharing program.	e
Provide residents with $75 mail-in refund on bicycle purchases.	e
Provide SmarTrip cards plus $100.00 Metro fare media per person, for free, one time, per employee, to each of the tenants' employees and each on-site employee of the property management company and/or building operator.	e **30 year commitment required**
Provide SmarTrip cards plus $100.00 Metro fare media per person, for free, one time, per resident.	e **30 year commitment required**
Provide a one-time membership fee subsidy in a car sharing program for each residential unit.	e
Locate and furnish an on-site Transit Store free of charge.	e
30 year commitment to operate an on-site Transit Store.	e
Operate a Shuttle service to metro (or other appropriate destinations) specific to the site/development.	e*
Install and maintain new bus stop infrastructure.	e
Construct new Metro Rail stations connection (entrance, escalator, fare array).	e*

Source: DDOT, 2012a.

* Shuttles and Direct Access to Metro are site specific. DDOT expectations for these measures would be dependent on the practicality of adopting them at a specific location.

Key: S Potential Substitute/Optional Measure
E Expected TDM Measure
e Expected TDM Measure (Option to Substitute)

3.6. WATER RESOURCES

Water resources discussed in this EA include surface water, groundwater, and floodplains. There are no wetlands located on the property.

3.6.1 What Water Resources are in the Project Area?

Surface Water

Surface water features within the proposed project area include Rock Creek and the C&O Canal, both of which border the property. Rock Creek borders the property on the east, and the Canal borders the property on the north side. Descriptions of these surface waters are provided below.

Rock Creek

Rock Creek flows from its headwaters in Laytonsville, Maryland, through Montgomery County, Maryland, and the northwest portion of Washington, DC, to join with the Potomac River at Georgetown. The Rock Creek watershed is approximately 76.5 square miles with 15.9 square miles contained within the District. The creek itself is approximately 33 miles long (DCDOH, 2004a).

Rock Creek Existing Water Quality

An estimated 500,000 people reside within the Rock Creek Watershed. Much of the developed area consists of impervious surfaces, such as buildings, roads, and driveways. Impervious surfaces decrease the amount of rainfall that infiltrates the ground and increases the volume and velocity of stormwater that enters surface drainages during storms. The high level of development and impervious surfaces within the watershed has led to increased stormwater runoff, which has severely impacted Rock Creek and its tributaries by increasing the amount of sedimentation in the creek, as well as carrying other pollutants into creek waters (NPS, 2011). Increases in stormwater runoff within the watershed subsequently led to higher peak flow rates in Rock Creek. These high peak flow rates result in high water velocities in the stream channel, resulting in erosion along the stream banks and excessive sedimentation downstream (NPS, 2011).

Water quality in the Rock Creek Watershed has been adversely affected by contaminants from the surrounding urban area, including sediment-laden runoff from bare soils and construction sites; oils and greases, metals, sediments from transportation corridors and parking lots; and nutrients and coliform bacteria from landscaping, stables, and leaking sewer lines (NPS, 2011).

In 1996, the District submitted the Total Maximum Daily Load (TMDL) Priority List and Report to the USEPA containing a list of waters that do not or are not expected to meet water quality standards as required by Sections 303(d) of the Clean Water Act. These waters are then considered "impaired" for certain constituents under the Clean Water Act. The Section 303(d) list was revised in 2002 based on additional water quality data. The TMDL for Rock Creek within the District was completed in 2004 (DCDOH, 2004a). Lower Rock Creek, which borders

the West Heating Plant parcel, is listed as impaired by organics, bacteria, fecal bacteria, and metals (DCDOH, 2004a and DCDOH, 2004b).

Rock Creek Designations and Water Quality Standards

The surface waters of the District are classified based both on their current uses and the future uses to which the waters could be restored. Each designation category has applicable water quality standards that are the principal water quality management objectives for those surface waters. The standards and classification of the District's waters are published in the District of Columbia Register, Chapter 11 of Title 21 DCMR.

The DDOE, Water Quality Division, has designated Rock Creek and its tributaries for restoration to meet all five beneficial use classes. The classes and the status of surface waters have been documented in District of Columbia 305(b) and 303(d) reports that are prepared every other year; the most recent was produced in 2010 (DDOE, 2010). Designated beneficial uses of Rock Creek are as follows:

- Class A, primary contact recreation.
- Class B, secondary contact recreation and aesthetic enjoyment.
- Class C, propagation of fish, shellfish, and wildlife.
- Class D, protection of human health related to consumption of fish and shellfish.
- Class E, navigation.

In 2008, all of the class uses were assessed. The 2008 report indicates that only Class E was being met in Rock Creek, and that Class A, Class B, Class C, and Class D were not being met (DDOE, 2008).

While 2010 data represents the most recent data, not all of the Class uses were assessed. The 2010 report indicates that only Class E is being met in Rock Creek, and Class C and Class D are not being met (DDOE, 2010). In 2010, there was insufficient data to assess whether Class A was being met, and Class B was not assessed at all (DDOE, 2010).

Rock Creek and its tributaries have also been designated "Special Waters of the District of Columbia" by the DDOE under the District's water quality standards (DDOE, 2010). The water quality of such designated waters must be maintained and not allowed to degrade.

C&O Canal

The C&O Canal is located in the Potomac River Basin, and receives much of its water from the Potomac River via intakes located along the length of the canal. Water also enters the District portion of the canal from the upstream sections located in Maryland, stormwater discharge, and direct runoff from an approximately 100-foot bank area that drains into the canal. The canal is 184.5 miles long and runs parallel to the Potomac River. The District portion of the C&O Canal

begins at the mouth of Rock Creek in Georgetown, Washington, DC and extends approximately 5 miles to the Maryland state line (DCDOH, 2004c).

Significant urban development occurs in the lower reaches of the Potomac River Basin in and around the Washington, DC metro area. Within the District, the primary source of stormwater runoff is residential development. Stormwater runoff flowing directly into the canal drains urban park land encompassed by the C&O Canal National Historical Park, as well as impervious surfaces such as roads (DCDOH, 2004c).

The TMDL for the C&O Canal was completed in 2004, and the segment that is located within the District and that flows adjacent to the West Heating Plant parcel is listed as impaired for fecal coliform bacteria (DCDOH, 2004c).

In 2008, water quality within the C&O Canal supported Class C and E uses, but did not support Class A, B, and D uses (DDOE, 2008). In 2010, water quality in the canal supported Class E and did not support Class C and D uses. Class B was not assessed for the canal in 2010, and there was insufficient information to determine if Class A was supported (DDOE, 2010).

West Heating Plant Permits

The Clean Water Act prohibits spills, leaks, or other discharges of oil or hazardous substances into the waters of the U.S. in quantities that may be harmful. The Clean Water Act limits any discharge of pollutants to a level sufficient to ensure compliance with the state water quality standards. Direct discharges of effluents are regulated under numerical limitations contained in National Pollutant Discharge Elimination System (NPDES) permits issued by USEPA or under state NPDES programs approved by USEPA. In the District, permits are issued by USEPA, Region III.

The West Heating Plant operated under NPDES permit number DC0000035, and this permit is still active and valid, even though the heating plant is no longer in operation. The permit is transferable, as long as the conditions remain the same. The permit allowed the heating plant to discharge effluent to Rock Creek from outfall number 002 (USEPA, 2012). The permit would remain in place until the disposal process has been completed. Effluent includes stormwater from roof drains, groundwater, and steam condensate leakage from a sump located at the edge of a steam tunnel for the heating plant. All other discharges, which at this time are limited to stormwater from the west tunnel, gas yard, and oil and coal yards, are directed into the sanitary sewer. The heating plant has also participated in the District's pretreatment program, and has been in continual compliance with its permits. GSA has monitored regularly for flow rate, total suspended solids, oil and grease, temperature, and pH (GSA, 2012a).

Groundwater

Differing geologic features and landforms cause significant differences in groundwater conditions from one part of an area to another. Physiographic provinces of the District include the Piedmont and Coastal Plain. The project area lies within the portion of the District that is

part of the Northern Atlantic Coastal Plain Aquifer System (USGS, 2009). Groundwater is currently not used as a primary potable source of drinking water in the District. The District depends mostly on surface-water supplies, although nearly 1 million gallons per day (Mgal/d) of groundwater is used for industrial purposes. Groundwater also is relied on for emergency backup for some hospitals, Government facilities, and embassies. Groundwater was an important source of drinking water for the District, and it was the sole source of drinking water until the city began to use surface water in 1859 (USGS, 2010).

Well yields of Coastal Plain aquifers depend on thickness and intergranular permeability of the sand and gravel layers and on well construction. Where permeable layers are sufficiently thick, well fields may produce several million gallons per day. Most Coastal Plain aquifers contain saltwater in downdip areas. Natural water quality may have locally excessive concentrations of iron (0.3 milligrams per liter [mg/L]) and the water can be hard (120 mg/L as calcium carbonate). The water may also be acidic in some areas with pH values as low as 5. In a few locations, aquifers have been contaminated from surface sources (USGS, 2010).

Groundwater quality in the District is subject to DC Municipal Regulations Parts 1150-1158.

As part of a Phase II ESA conducted on the parcel, an inventory was undertaken to assess existing wells in order to calculate relative groundwater elevations and to prepare groundwater flow direction mapping for the West Heating Plant site (see Figure 3-12) (Analytical Services, Incorporated, 2010). Tidal fluctuations within the adjacent Rock Creek caused considerable fluctuation in groundwater elevations at monitoring wells MW-5 and MW-1, which are located very near to the creek. As shown in Figure 3-12, net groundwater flow direction is to the northeast on the northern part of the site, while in the southern portion of the site the flow is more southeasterly. See Section 3.10, Hazardous Materials and Wastes/Public Health and Safety, for additional details on groundwater quality at the West Heating Plant parcel.

Floodplains

Federal activities within floodplains must comply with the Floodplain Management Executive Order 11988, CFR 1977. Per Executive Order 11988, Federal agencies are required to avoid adverse effects associated with the occupancy and modification of floodplains to the extent possible, thereby minimizing flood risk and risks to human safety. An eight-step decision-making process for floodplain management and wetlands protection has been outlined by 44 CFR 9.6 and in GSA's Floodplain Management Desk Guide (see Figure 3-13).

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the District, the entire West Heating Plant parcel is located in the 100-year floodplain (FEMA, 2010), and the property has been subject to flooding in the past (Table 3-12). Previous base flood elevations for Rock Creek were listed between 16 and 17 feet amsl, and the West Heating Plant site ranges between 10 and 20 feet amsl (CETROM Consulting Engineers, Inc., 2000). Current flood maps do not indicate the base flood elevation.

Table 3-12 Significant Historical Flood Events Affecting Rock Creek

Date of Flood Event	Description
June 1-2, 1889	Flooding on Potomac and Rock Creek; unofficial crest of 11.5 feet above flood stage
May, 1924	Flooding from extended rainfall; greatest damage since 1889 flood
October 1942	Flooding from extended rainfall; Potomac River stage was 0.3 feet higher than in 1936 flood
September 1952	Flooding from rains associated with Hurricane Able
June 1972	Flooding from rains associated with Tropical Storm Agnes; flooded Rock Creek
September 5-6. 1979	Flooding from rains associated with Hurricane David; flooded Rock Creek
September 18-19, 2003	Flooding from rains and storm surge associated with Hurricane Isabel.

Source: FEMA, 2010.

A retaining wall/bulkhead clad with a stone veneer (approximately 10 feet amsl) serves as the west bank of Rock Creek, and the southern edge of the C&O Canal serves as the northern edge of the property. A strip of turf grass between the retaining wall and the tall perimeter wall (which has a height of approximately 20 feet amsl on the Rock Creek side) around the West Heating Plant site serves as a riparian buffer for Rock Creek. The interior tall perimeter wall provides site specific flood control functions for the Coal Yard and West Heating Plant site overall (this structure has not been identified as a flood control structure of the United States by FEMA, [FEMA, 2010]). This wall has not been overtopped during flood events since its construction, including during Tropical Storm Agnes in 1972, the flood of record since construction of the wall (personal communication, GSA, 2012b).

It should be noted that the retaining wall/bulkhead has lost its stone veneer and cap stones in some places along the wall, and broken drain pipes have caused sinkholes to appear at spots along the riparian buffer behind the retaining wall, although a 2010 Condition Report indicates that the wall itself is structurally sound (Keast & Hood Co., 2010).

3.6.2 What are the Impacts to Water Resources?

No-Action Alternative

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel. Therefore, there would be no changes to existing water resources on the site.

Figure 3-12 Groundwater Flow.

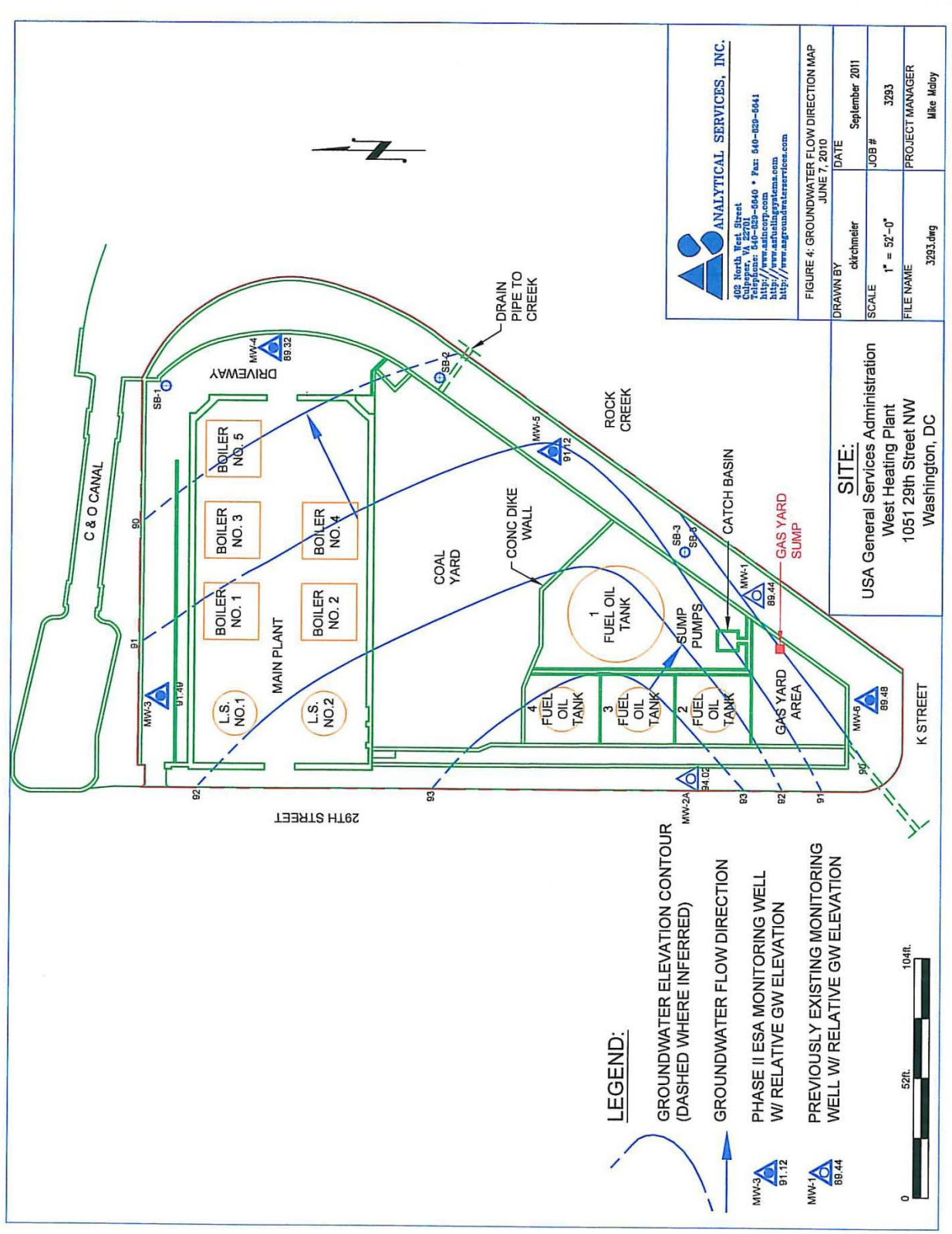
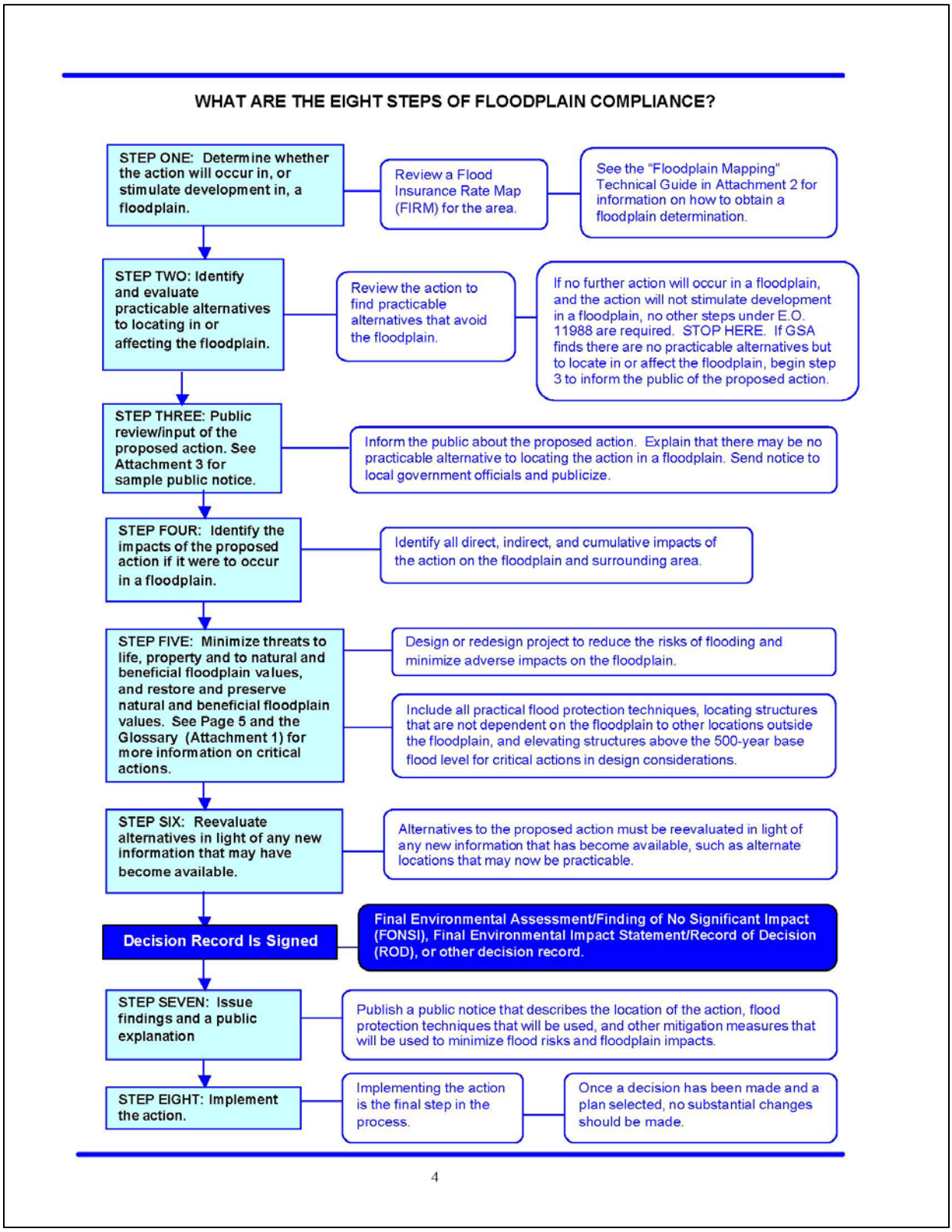


Figure 3-13 Eight Steps of Floodplain Compliance



Disposal Alternative – Direct Impacts

There would be no direct impacts to water resources from disposal of the West Heating Plant parcel, but there could be indirect impacts related to future redevelopment of the site after disposal has occurred, as described below. In compliance with GSA's Floodplain Management Desk Guide, GSA would inform the bidder/buyer of the property that the property is located within the 100-year floodplain (see Appendix F).

Disposal Alternative – Indirect Impacts

As described in Chapter 3, GSA has developed a reasonably foreseeable development scenario that could occur on the West Heating Plant parcel after disposal. The resulting construction could impact water resources, but these impacts would be considered indirect impacts from the proposed action, which is disposal. A few basic assumptions have been factored into the analysis of potential indirect impacts to water resources from future development, which are: 1) the developer would comply with all required permits, regulations, and guidelines pertaining to protection of water resources and 2) the developer would implement best management practices, as required by Federal and District of Columbia regulations, to minimize impacts to water resources. A discussion of potential indirect impacts is provided in the following sections.

Surface Water

Indirect impacts to surface water features – Rock Creek and the C&O Canal, specifically, would result from potential runoff during the construction process. It is assumed that no construction would occur within Rock Creek or the C&O Canal, but if it did, the developer would need to coordinate the proposed development with DDOE. Depending upon the future use of the parcel, the developer would be responsible for obtaining required permits in compliance with the Clean Water Act and for developing any required stormwater management plans or sediment and erosion control plans, which could require implementation of best management practices such as the use of silt fencing to minimize runoff. Additionally, as described in Section 3.10, Hazardous Materials and Wastes/Public Health and Safety, the developer would ensure appropriate remediation of existing hazardous substances on the site occurs, thereby reducing the potential for contamination of surface water. Therefore, indirect impacts to surface water from the proposed action would be minor and temporary.

Any work to repair the veneer on the bulkhead/retaining wall by Rock Creek and repair the drainage pipes that have caused the sinkholes in the riparian buffer would require work to be done from the water or at the water's edge. Although the specific approach would not be known until the future property owner applies for permits to repair the wall, such work would be subject to appropriate permits from the District of Columbia and U.S. Army Corps of Engineers for work in a Water of the United States, and would need to follow waterway construction practices, as laid out in the District of Columbia guidelines for in-stream construction in the sediment and erosion control handbook (DDOE, 2003). The use of sediment and erosion control practices and best management practices such as coffer dams would prevent long term adverse impacts to Rock Creek, although there would likely be short term, minor, adverse effects on surface water

flow, as the stream channel would be constricted during construction to accommodate the coffer dams, should they be necessary. Constriction in stream width would concentrate flow and potentially increase downstream scour and erosion during storm events.

Groundwater

Indirect impacts to groundwater are not expected during the redevelopment process. The future developer would implement appropriate measures to prevent any groundwater contamination, including the handling of any hazardous materials used during construction. As described above, groundwater is not typically used as a source of potable water in the District. Per the reasonably foreseeable development scenario described in Chapter 3, there could be a mix of residential and commercial development on the site. Should groundwater be needed in support of the new development, the developer would be required to comply with all applicable regulations, including those enforced by the DDOE and the DC Municipal Regulations Parts 1150-1158 for any groundwater uses. A Human Health Risk Assessment was performed on the site, and the DDOE concurred that groundwater remediation was not required from past operational activities of the West Heating Plant (see Section 3.10). See Appendix F for covenants and notices applicable to groundwater at the West Heating Plant site.

Floodplains

The entire West Heating Plant parcel is located within a floodplain; therefore, any future redevelopment of the site would result in indirect impacts to floodplains. GSA has evaluated the disposal action in accordance with the eight-step process required for actions that may occur in a floodplain. GSA would also inform the bidder/buyer of the property that the property is located within the 100-year floodplain (see Appendix F).

Step 1: GSA has identified the West Heating Plant parcel as located within the 100-year floodplain, based on FEMA Flood Insurance maps.

Step 2: Indirect impacts from future redevelopment can only be estimated based upon a reasonably foreseeable development scenario. It would be the ultimate responsibility of the developer to identify potential building alternatives to minimize impacts to the floodplain. There are no other alternatives to disposal because the property has been deemed surplus, and GSA has followed the appropriate disposal process as described in Chapter 1 of this EA.

Step 3. Public involvement occurred during the scoping process and during the 30-day public review of the Draft EA. Additionally, GSA provided copies of the Draft EA to the U.S. Army Corps of Engineers, DDOE, and FEMA and notified these regulatory agencies of GSA's intent to dispose of Federal property located in a 100-year floodplain.

Step 4: Because the site is already developed, there would be no net loss of the beneficial natural values of the floodplain from future redevelopment. The redevelopment scenario described in Chapter 3 of this EA assumes that the existing retaining wall would be incorporated into any future redevelopment, which would act as a riparian buffer. The developer would be required to adhere to appropriate building practices for construction in a floodplain, such as not changing the

natural flood channel, developing a flood management plan or adhering to building codes for construction in a floodplain. Therefore, indirect impacts to floodplains would be negligible.

Step 5: See discussion in Step 4.

Step 6: As previously discussed, disposal of the West Heating Plant parcel would not directly impact floodplains, but there would be an indirect impact from any future development on the site after GSA has disposed of the property. The developer would be responsible, as required by the DDOE, for implementing any best management practices and developing building alternatives after the property has been disposed. There are no other alternatives to disposal, and development alternatives cannot be identified until the property is no longer owned by GSA. Furthermore, in compliance with GSA's Floodplain Management Desk Guide, GSA would inform the bidder/buyer of the property that the property is located within the 100-year floodplain.

Steps 7: Public notification regarding GSA's action in the base floodplain is provided in this Final EA.

Step 8: This Step would occur after the decision document has been signed. The public has an additional opportunity to comment on the Final EA and decision document.

Best Management Practices and Review Processes

The actual reuse and redevelopment of the West Heating Plant parcel, once it is sold at a competitive public auction and is no longer under U.S. Government ownership, would be subject to several agency reviews and permits specifically relating to water resources, including:

- DDOE Floodplain Management program/Flood Zone Building Permit through the District Department of Consumer and Regulatory Affairs (DDOE, 2012b)
- DDOE sediment and erosion control guidelines (DDOE, 2003)
- Clean Water Act and DDOE Water Quality Regulations, including Stormwater Management, or Groundwater Protection
- District of Columbia Zoning Commission (to zone the property) (DCOZ, 2012)
- DCOP
- U.S. Army Corps of Engineers (for any work on the retaining wall along Rock Creek) (USACE, 2012)
- USEPA

Best management practices would likely be required to minimize indirect impacts from future redevelopment of the site. As described above any future developer would be required by DC, through the DDOE Water Quality program, to implement best management practices such as sediment and erosion control measures (i.e., silt fencing) to reduce stormwater runoff during any future construction on the site. Any future developer would be required to implement as per applicable regulations, best management practices to prevent the possibility of groundwater contamination during construction, such as preventing fuels or hazardous materials from

leaching into the ground and following standard operating procedures. The developer would be required to obtain appropriate building permits for construction in a floodplain and would implement best management practices for construction in a floodplain, per the DDOE Floodplain Management program. Additionally, GSA is required as per the Floodplain Desk guide to complete the eight-step process in compliance with the Executive Order and will include a notice in the bid documents and conveyance documents that the property is located in a 100-year floodplain.

3.6.3 What Mitigation Measures Would be Taken to Reduce Impacts to Water Resources?

Mitigation measures would not be required for the proposed disposal of the West Heating Plant parcel. GSA is required as part of the Floodplain Desk Guide to complete the eight-step process in compliance with Executive Order 11988 and will include a notice in the bid documents and conveyance documents that the property is located in a 100-year floodplain (see Appendix F).

Any improvements to the retaining wall would require appropriate permits and the use of construction practices consistent with DDOE sediment and erosion control guidelines. If the conditions of the existing NPDES permit change, the future property owner/developer would need to apply for a new NPDES permit or comply with stormwater regulations, as appropriate.

3.7. HISTORIC RESOURCES

3.7.1 What are the Historic Resources in the Project Area?

GSA, in consultation with the DC SHPO and in accordance with the regulations implementing Section 106 of the NHPA, has determined the APE of the proposed action on historic properties. The APE is larger than the actual project area because it allows the consideration of effects on neighboring historic properties. Again, for the purposes of this EA, the potential effects would be indirect, based on the reasonably foreseeable development scenario rather than the disposal itself. The APE is illustrated in Figure 3-14. Its boundaries have been drawn primarily to acknowledge the visibility of the 110-foot tall West Heating Plant from a variety of nearby locations.

Within the APE are three historic districts, one of which is a National Historic Landmark (NHL), and several structures that are individually listed in the NRHP. The West Heating Plant is within the boundaries of the Georgetown Historic District, an NHL. The C&O Canal Historic District abuts the West Heating Plant parcel on the north and the Rock Creek and Potomac Parkway Historic District bounds the property on the east. Along the Rock Creek and Potomac Parkway and within the APE are the ruins of the NRHP-listed Godey Lime Kilns. Lock No. 1, a contributing structure of the C&O Canal Historic District that stands along the north side of the West Heating Plant property (DC SHPO, 1999).

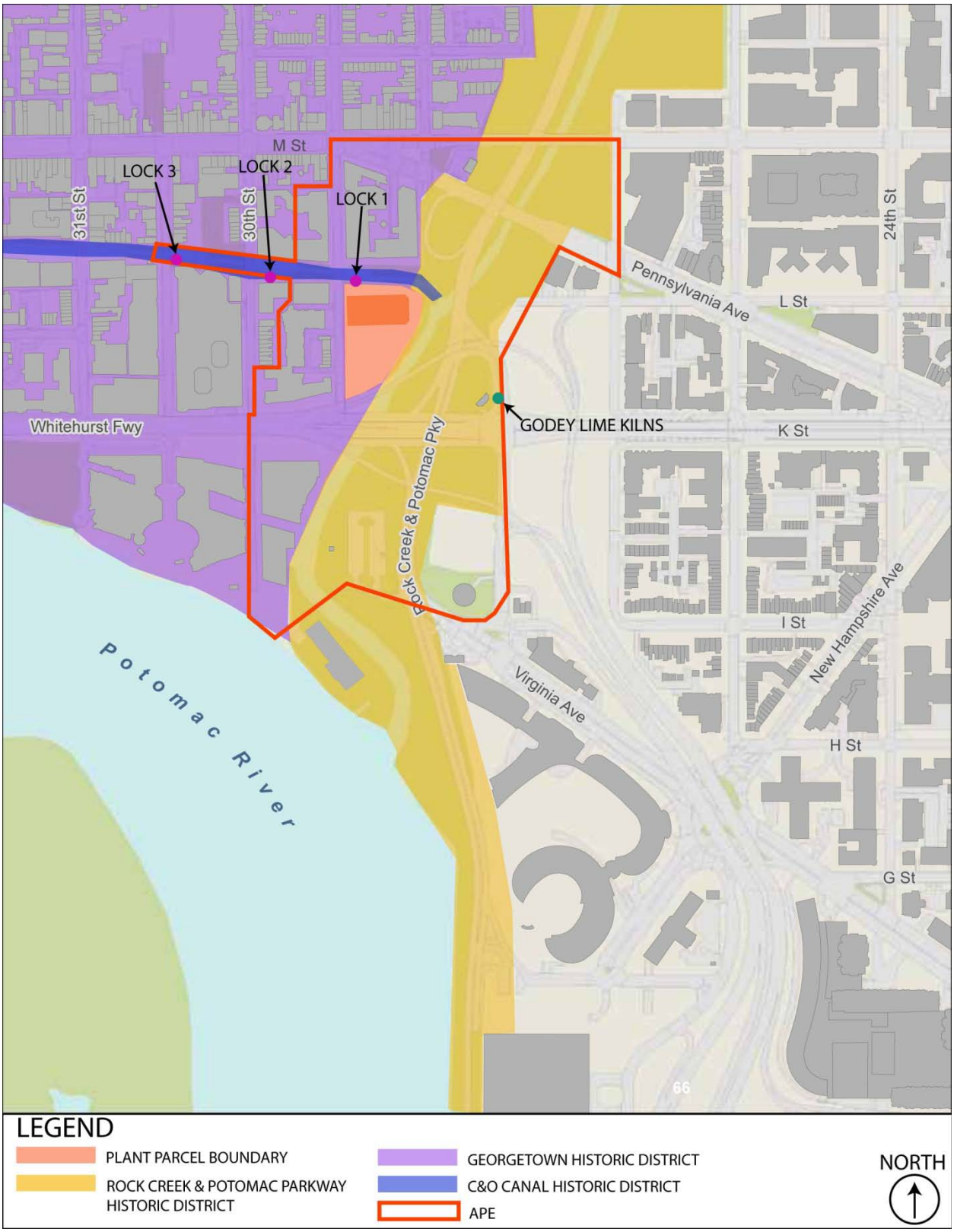
Georgetown Historic District (A National Historic Landmark)

Georgetown was founded by an Act of the Maryland Assembly in 1751 and became part of the District of Columbia upon its establishment in 1791, although it remained a separate jurisdictional entity within the District until 1871.

The Georgetown Historic District is a remarkably intact example of a historic port town and encompasses the area originally laid out in 1751. Its narrow grid streets contrast from the wide, planned streets of L'Enfant's city and its collection of buildings and structures are among the city's oldest, demonstrating a rich variety of residential, commercial, institutional, and industrial examples. From the modest to the grandiose, the historic district's dwellings exhibit styles and forms of all social levels and include Federal, Greek Revival, Italianate, Queen Anne, Romanesque, and Classical Revival styles amid the vernacular.

The Georgetown Historic District contains approximately 4,000 primary buildings. The district was first established by the Old Georgetown Act in 1950 and listed in the DC Inventory of Historic Sites in 1964. In 1967 the Georgetown Historic District was designated a NHL and was listed in the NRHP. The period of significance for the Georgetown Historic District, established in the 2003 update, spans the years from 1751 to 1950. The district is roughly bounded by Reservoir Road and Dumbarton Oaks Park on the north, Rock Creek Park on the east, the Potomac River on the south, and Glover-Archbold Park on the west (DC SHPO, 1999).

Figure 3-14 Cultural Resources.



C&O Canal Historic District

The C&O Canal Historic District is a significant and well-preserved example of canal technology and was a major engineering achievement when it was completed in 1850. The C&O Canal Company was chartered in 1825 and the section that connected Little Falls to Rock Creek was completed in 1831. The portion of the canal that passed through Georgetown had four sandstone locks, all built in 1830. After its completion, the 184.5-mile canal connected Georgetown with Cumberland, Maryland and brought raw materials to the fledgling capital city. The canal also brought the expansion of businesses, particularly in Georgetown, that used the canal as a power source and as a direct route for raw and finished materials. The canal remained in operation until 1924, when operations ceased due to flood damage and the purchase of the company by the B&O Railroad. In 1938, the B&O Railroad sold the canal property to the U.S. Government for $2 million dollars to serve as an unemployment relief measure called Federal Project 712. It provided for the rehabilitation of the canal and recreational facilities from Georgetown to Seneca, Maryland. The Civilian Conservation Corps assigned two camps to the project beginning in 1938. The major work assigned to the Civilian Conservation Corps camps included the cleaning of the accumulated debris in the canal and along the towpath, the re-establishment of the grade of the floor of the canal, and reconstruction and re-enforcement of the canal dykes and towpath at some points and the reconstruction of the lock gates. Lock No. 1 and the adjacent drydock were restored as early as February 22, 1939, when a ceremony celebrating George Washington's Birthday was held on the newly opened canal to dedicate the new canal parkway era (Leedecker and Kuhn, 2012).

In 1961, the canal in its entirety was recognized as a National Historic Monument and ten years later it became the C&O Canal National Historical Park. The C&O Historic District was listed in the DC Inventory of Historic Sites in 1964 and in the NRHP in 1966. It is historically significant under the themes of architecture, engineering, commerce, transportation, military history, and conservation. It has a period of significance of 1828 to 1924 (DC SHPO, 1999).

Locks 1 and 2, contributing resources to the C&O Canal Historic District, are located near the West Heating Plant. Lock No. 1 stands on the north side of the West Heating Plant. Built in 1830, it is constructed of Aquia Creek freestone; however, much of the structure has been rebuilt with granite, concrete, brick, and limestone. The lock is the first in a series of four, closely spaced Georgetown locks separated by boat basins. Lock No. 2 is located west of Lock No. 1, past 29th Street, and was also built in 1830. The lock is built of Aquia Creek freestone; however, subsequent repairs have been made with concrete, brick, limestone, and granite (NPS, 2012).

Rock Creek and Potomac Parkway Historic District

In the eighteenth century, the lower Rock Creek Valley served as a transportation route and a natural boundary of the newly established capital city. By the nineteenth century, the valley had evolved from a power source for industry to a public dumping ground. In the early twentieth century, the Rock Creek and Potomac Parkway became a principal component of the comprehensive park system for Washington, DC. Conceived in 1902 by the U.S. Senate Park Commission, the new parkway closely followed the ideals of the City Beautiful Movement and linked the Mall and Potomac Park to the National Zoological Park and Rock Creek Park. It is one

of the earliest parkways in the nation, the oldest in the metropolitan area, and the first to be federally funded. The park reflects the influence of Frederick Law Olmsted, Jr., who initially proposed the parkway concept. The Rock Creek and Potomac Parkway is historically significant under the themes of community planning and development, landscape architecture, architecture, and recreation.

The Rock Creek and Potomac Parkway Historic District was listed in the DC Inventory of Historic Sites in 1964 and was listed in the NRHP in 2005. The period of significance for the Historic District is 1791 to 1951. The four-lane roadway is approximately 3.1 miles long and begins at Lincoln [Memorial] Circle, extends along the Potomac Riverfront, and then traverses the entire lower valley of Rock Creek. The linear parkway comprises approximately 180 acres and incorporates contributing bridges, the stone and stone-faced retaining walls that line the creek, and the roadway (Barsoum, 2005).

Godey Lime Kilns

The Godey Lime Kilns stand within the boundaries of Rock Creek and Potomac Parkway at what was historically 27th and L Street, NW. The kilns were an integral part of the once-thriving Godey Lime Kilns, established on the site in 1864. Its location adjacent to the C&O Canal contributed to business's profitability. The business continued until 1908. Today, two rubble stone kilns remain along the west side of the parkway south of the Pennsylvania Avenue Bridge and north of the Whitehurst Freeway.

The remnants of the Godey Lime Kilns were preserved during the construction of the Rock Creek and Potomac Parkway. The structures were listed in the NRHP in 1973 and in the District of Columbia Inventory of Historic Sites in 1974 (Myer, 1965).

The West Heating Plant

Completed in 1948, the West Heating Plant was designed by Washington, DC, and Public Buildings Administration (PBA) consulting architect William Dewey Foster (1890-1958). The new heating plant, located at the corner of 29th and K Street, NW in Georgetown, was built to supply heat to existing and future government buildings in downtown Washington and to alleviate the stress on, as well as provide support for the Central Heating Plant (13th and C Street, SW). Although Congress appropriated the funds for the building in 1940, World War II delayed its construction. Planning resumed in 1945, and construction recommenced in 1946. The project was completed in 1948 at the cost of $7.8 million. Louis A. Simon (1867-1958) and later Gilbert Stanley Underwood (1890-1961), Supervising Architects for the PBA under the Federal Works Agency (FWA), oversaw the project, and Charles H. Tompkins Company of Washington, DC served as the contractors.

The West Heating Plant is a monumental, 110-foot tall building constructed from buff-colored brick. Constructed a little more than ten years after the Art Deco-style Central Heating Plant (1933-1934), the West Heating Plant illustrates a shift from the decorative Art Deco to a more streamlined Moderne interpretation of the style.

Rising four stories above a random coursed stone foundation, the West Heating Plant is constructed of steel framing clad in a buff-colored five-course American bond brick veneer. The vertical mass of the building is accentuated by tall, narrow rows of industrial windows. The heavy bulk of the building is further relieved by linear patterned brick accents on the buildings corners. The primary elevation of the building fronts 29th Street and serves as the monumental façade of the building. A centered recessed bay with a large 72-foot vertical band of industrial windows is the centerpiece of the façade. The streamlined effect of the bay is emphasized by its rounded corners of header brick. Entrance doors are located on the sides of the bay and are outlined with a granite post and lintel frame.

The interior of the building holds five boilers that collectively generated 9 million tons of steam per hour, when the building was in operation. The building was originally constructed to house six boilers at maximum capacity; two were installed shortly after the building's completion and three were subsequently installed. A series of catwalks crisscross the interior of the building, from the basement to the fifth floor. A small office, conference room, and storage room occupy the western portion of the second floor. Historically coal fueled the plant; however, it was later powered by natural gas. The building has not generated steam since 2000.

South of the West Heating Plant is a coal and storage yard, which is surrounded by a random-coursed stone wall. The wall continues around the east and north sides of the West Heating Plant. The storage yard, directly south of the building, has most recently been used for parking. Three small tanks and a large tank stand along the south side of the storage yard.

The eligibility of the West Heating Plant for the NRHP has been established by the GSA and by its location within the Georgetown Historic District NHL. In conjunction with the preparation of this EA, GSA has also prepared a formal Determination of Eligibility (DOE) identifying contributing, character-defining features and the building's period of significance. The preliminary findings of the Draft DOE follow (see Appendix E).

According to the National Register's criteria which are based upon the quality of significance in American history, architecture, archeology, engineering, and culture present in districts, sites, buildings, structures, and objects that possess integrity of location, setting, materials, workmanship, feeling, and association, the West Heating Plant meets two criteria, criterion A and criterion C:

Criterion A: properties that are associated or linked to events that have made a significant contribution to the broad patterns of our history. The West Heating Plant meets Criterion A as it is symbolic of the rapid growth of the Federal government, particularly in Washington, DC, during the years leading up to World War II. Planned and constructed by the PBA to relieve the over-taxed Central Heating Plant, the West Heating Plant was an essential link in the system of Federal buildings located within the city's downtown core. The building was not only necessary to relieve the burden of the Central Heating Plant, but to supply heat to the burgeoning number of Federal buildings erected in Washington, D.C., as part of the national defense program. Although war shortages ultimately postponed its construction, the West Heating Plant was one of the Federal government's most urgent projects after the war ended (U.S. Congress, 1945). The importance of the West Heating Plant within the Federal expansion efforts is exemplified in its

acclaim as the most modern heating plant of its kind in the country at the time of its construction (Washington Post, 1948).

The West Heating Plant is also associated with the significance of the Georgetown Historic District under Criterion A as it illustrates the industrial use of the Georgetown waterfront during the second quarter of the twentieth century. After the closure of the C&O Canal in 1924, port activity essentially ceased, forcing the Georgetown waterfront to diversify its interests. The city's first zoning ordinance in 1920 designated the Georgetown waterfront as "industrial" and heavy industry, including factories, garages, and construction companies, began to occupy or replace the eighteenth century mills and warehouses along the waterfront (Williams, 2003). The site of the West Heating Plant was chosen in part for its availability, location near the newly-constructed Federal buildings and the B&O Railroad, and for its industrial zoning, which follow the broad patterns of development within the Georgetown Historic District.

Criterion C: properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. The West Heating Plant meets Criterion C as it embodies the characteristics of the Moderne style, successfully interpreted for an industrial building. The building's monumental quality and its Moderne stylistic influences illustrate the importance the PBA placed on design, even in the construction of industrial buildings. Exemplary of the style are its clean, streamlined surfaces, rounded and embellished corners, and spans of vertical industrial windows. The West Heating Plant's grand scale gives the building a dominant presence that rises above the narrow Georgetown streets and is visible over the tree line from Rock Creek and Potomac Parkway.

Hailed as the most modern heating plant of its kind in the country at the time of its construction, the intact interior and mechanical systems of the building further the building's significance under Criterion C. The industrial significance of the building is expressed in its interior layout, materials, and machinery including its three-story open floor plan, exposed I-beams, concrete flooring, metal stairs and catwalks, tile-block walls, boilers, water softeners, and the coal-conveyor system, which remain in place.

Character Defining Features

Site Character Defining Features

- Stone-clad perimeter wall

Exterior Character-Defining Features

- Ornamental brick on building corners
- Buff colored brick
- Stone veneer on basement/water table

- Vertical bands of metal-sash industrial windows (window screens are later and do not contribute)
- Stepped flat roof
- Large expanses of smooth, unadorned wall surfaces
- Round, streamlined corners framing central window on west façade
- Metal ceiling above main entry featuring single, circular flush light fixture
- Simple building cornice
- Entry door arrangement and door surrounds
- Brick screen on rooftop
- Stone marker on primary façade

Interior Character-Defining Features

- Large open three-story space currently occupied by boilers
- Glazed tile block walls
- Metal-sash awning windows with operable cranks
- Open metal stairs and catwalks
- Concrete flooring
- Clay Tile Flooring (1st Floor)
- Exposed I-beams
- Conveyor system and scales
- Boilers and Water Softeners
- Coal bunkers
- Skip hoist system
- Stair halls inside the two primary entrances including the streamlined metal railings, marble wainscoting, multi light doors, and light fixtures.

Coal Yard Character-Defining Features

- Open yard
- Perimeter stone-clad wall
- Crane operator control booth
- Coal conveyor belt equipment

Period of Significance

- 1942-1968

With regard to the West Heating Plant's significance for the Georgetown Historic District, the 2003 update to the nomination of the Historic District cited "the increased industrial growth and a related decline in the socio-economic status of the district in the first half of the 20th century" (Williams, 2003). The West Heating Plant, planned and constructed between 1940 and 1948, illustrates this industrial period of development and falls within the historic district's period of significance.

3.7.2 What are the Impacts to Historic Resources?

Impacts on historic and cultural resources are evaluated for alterations of a historic property in a way that adversely affects the characteristics that qualify the resource for inclusion in the NRHP or local landmark listings. While impacts to cultural resources under NEPA are not described with identical terminology as effects on historic properties under the NHPA (i.e., no effect, no adverse effect, or adverse effect), there is a similarity. NHPA requires Federal agencies to consider the effects of their actions (termed "undertakings" under NHPA) upon historic properties at the earliest possible planning stage so as to preserve a full range of alternatives to avoid, minimize, or mitigate adverse effects to historic properties. An effect is considered adverse when an undertaking alters any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the resource's location, design, setting, materials, workmanship, feeling or association. Standard procedures under NEPA require the Section 106 consultation process under NHPA, detailed in the ACHP regulations 36 CFR Part 800, to be concluded before a FONSI can be issued for an EA. When an undertaking does have unavoidable adverse effects under NHPA, they are typically resolved by means of a NHPA Section 106 Memorandum of Agreement (MOA) which contains stipulations to minimize or mitigate the adverse effect. An MOA is negotiated and executed by the lead Federal agency, the SHPO, the ACHP (either directly or under its regulatory oversight), and occasionally invited Consulting Parties.

For this EA the following equivalence will be used for impacts to cultural resources under NEPA and effects on cultural resources under NHPA:

Negligible: The impact is at the lowest level of detection with neither adverse nor beneficial consequences. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Adverse impact—Alteration of a pattern(s) or feature(s) of a historic district or structure listed on or eligible for the NRHP would not diminish the integrity of a character-defining feature(s) or the overall integrity of the historic property. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial impact—The character-defining features of the historic district or structure would be stabilized/preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS, 1995), to maintain its existing integrity. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate: Adverse impact—The impact would alter a character-defining feature(s) of a historic district or structure and diminish the integrity of that feature(s) of the historic property. For purposes of Section 106, the determination of effect would be *adverse effect* but one which could be avoided, minimized, or mitigated through further consultation and agreed-upon stipulations.

Beneficial impact—The historic district or structure would be rehabilitated in accordance with the *Secretary of the Interior's Standards for the*

Treatment of Historic Properties to make possible a compatible use of the property while preserving its character-defining features. For purposes of Section 106, the determination of effect would be *no adverse effect.*

Major: Adverse impact—The impact would alter a character-defining feature(s) of the historic district or structure and severely diminish the integrity of that feature(s) and the overall integrity of the historic property. For purposes of Section 106, the determination of effect would be *adverse effect* and would present serious difficulty to avoid, or minimize the effect. An Agreement Document would typically consist of mitigation measures in the form of stipulations.

Beneficial impact—The historic district or structure would be restored in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to accurately depict its form, features, and character as it appeared during its period of significance. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Duration: Short-term impacts, which would be adverse, are equivalent to the period of construction, which may range from 9 to 21 months. Long-term impacts would extend beyond the period of construction.

No-Action Alternative

Under the No-Action Alternative there would be no effect under Section 106 and no impact to cultural resources. This conclusion is based upon the assumption that GSA would expend sufficient maintenance money in the West Heating Plant Parcel to avoid "demolition by neglect." Specifically, there would be no impact to the West Heating Plant itself, the C&O Canal Historic District, the Georgetown Historic District, the Godey Lime Kilns, and the Rock Creek and Potomac Parkway Historic District Park.

Disposal Alternative – Direct Cultural Resource Impacts

Under the established practice of compliance with Section 106 (36 CFR 800.3) of NHPA, the disposal of a historic property from ownership by the U.S. Government without provisions to protect the integrity of the historic character constitutes an adverse effect. This does not apply to real estate transferred to another Federal agency, because that agency would have the same responsibilities under NHPA.

As indicated in Chapter 1 of the EA, the proposed action is the disposal of the West Heating Plant, i.e. the 2.08-acre parcel including the West Heating Plant building and all other appurtenances on the property from ownership by the U. S. Government. The culmination of the disposal process, the sale of the excess West Heating Plant property to the public at a competitive auction, has not yet taken place. Therefore, the opportunity remains to incorporate provisions such as historic preservation covenants in the deed of sale, which would afford a level of protection to historic properties (see Appendix F).

The Section 106 process requires GSA to identify all NRHP historic properties within the APE, evaluate whether they are affected by the undertaking, and then determine if the effects are adverse. As stated earlier, the goal is the avoidance, minimization, or mitigation of adverse effects. In Section 3.7.1, all the historic properties potentially affected – not only the West Heating Plant itself – were identified. In addition, the character-defining or contributing features of the potentially affected resources were identified.

GSA policy on implementing the NHPA, as stated in its administrative procedures, is clear: at a minimum, historic preservation covenants accompanying the deed must require that alterations be consistent with the Secretary of the Interior's Standards for Rehabilitation and the covenants must be supported by enforcement provisions. With reference to the Secretary of the Interior's Standards in the covenants, "No Adverse Effect" is determined.

Because the proposed action or undertaking is the disposal, not a predetermined reuse or redevelopment scheme, it is not possible to assess effects under Section 106 of the NHPA with any specificity except to acknowledge that a disposal action to a non-Federal entity without covenants in place to protect historic properties would be considered an adverse effect. Solely for purposes of this EA analysis, the EA addresses the anticipated impacts of the reasonably foreseeable development scenario on historic properties. The scenario, which represents the highest level of use, maximizes development on the site but is constrained by certain existing conditions and the parameters of W-2 zoning.

Disposal Alternative – Indirect Cultural Resource Impacts

A few basic assumptions due to the NRHP eligibility of the West Heating Plant have been factored into the reasonably foreseeable development scenario from the outset: (a) the retention of the shell of the main building, (b) the significance of the façade materials and fenestration, and (c) the possibility of retaining some components of the interior engineering works. The reasonably foreseeable development scenario also takes into account several limitations imposed by the site that have the effect of protecting historic resources. An example is the delineation of the "buildable area," which follows the stone retaining walls and excludes the edges of neighboring Rock Creek and the C&O Canal. This scenario would avoid impacts to the C&O Canal Historic District and its historic locks.

Methodology

Within the APE, potential effects can be divided into (a) those on the West Heating Plant itself as a monolithic structure, (b) those on other significant historic features of the West Heating Plant parcel, (c) those on the Georgetown Historic District of which the West Heating Plant is a part, and (d) those on other external historic properties. In evaluating these potential effects, it is reasonable to assume that the intensity of the potential effect is likely to be greater at the core and less so at the periphery.

Certain character-defining features of the West Heating Plant are clearly less threatened by the reasonably foreseeable development scenario than others. Examples would be the buff-colored

brick and the ornamental brick on building corners of the exterior. The likelihood of any reuse or redevelopment scheme requiring a change to these elements is low.

Other features fall into an in-between status. The reasonably foreseeable development scenario identifies the façade fenestration as important. Also, the architectural history analysis incorporated in this EA specifically lists the "vertical bands of metal-sash industrial windows" as a character defining feature. It may be assumed that the architects of any future adaptive reuse of the heating plant building would make the maximum effort to propose advaptive uses that will lead to the retention of the integrity of this feature in accordance with the Secretary of the Interior's (Rehabilitation) Standards for the Treatment of Historic Buildings. Nonetheless, windows must be functional and future consultation with the DC SHPO would determine if elements of the windows – glass, steel frames – could be modified or replaced and remain consistent with the Secretary's Standards.

Lastly, there are character defining features such as the open yard in the Coal Yard and nearly all the interior ones listed for the West Heating Plant building whose retention under both the reasonably foreseeable development scenario and most likely future reuse and redevelopment schemes is uncertain or impossible. Although there are adaptively reused industrial buildings in which many remnants of the former industrial uses have been retained - examples include the Naval Sea Systems Command Headquarters Building at the Washington Navy Yard in Washington, DC and the Tate Modern Gallery in London – recordation of some features is more likely. Depending on the proposed adaptive uses, interior industrial features could be appropriately retained in place or salvaged for use in the building. During Section 106 consultation, particularly at the October 4, 2012 meeting, the DC SHPO indicated flexibility in reviewing proposed interior alterations to accommodate appropriate adaptive use, given the future conversion of the heating plant to one or more new uses.

Anticipated Impacts to Historic Properties within the APE of the Reasonably Foreseeable Development Scenario

See the discussion in "The Proposed Action – Direct Cultural Resource Impacts" for equivalency to Section 106, NHPA effects.

The West Heating Plant

- Site Character Defining Features
  - Stone-clad perimeter wall- Negligible

- Exterior Character-Defining Features
  - Ornamental brick on building corners- Negligible
  - Buff colored brick- Negligible
  - Stone veneer on basement/water table- Negligible
  - Vertical bands of metal-sash industrial windows (window screens are later and do not contribute)-Moderate Adverse (Long-term)
  - Stepped flat roof- Minor Adverse (Long-term)
  - Large expanses of smooth, unadorned wall surfaces- Negligible

  - Round, streamlined corners framing central window on west façade- Negligible
  - Metal ceiling above main entry featuring single, circular flush light fixture- Negligible
  - Simple building cornice- Negligible
  - Entry door arrangement and door surrounds- Negligible
  - Brick screen on rooftop- Minor Adverse (Long-term)
  - Stone marker on primary façade- Negligible

- Interior Character-Defining Features
  - Large open three-story space currently occupied by boilers- Moderate Adverse (Long-term)
  - Glazed tile block walls- Minor Adverse (Long-term)
  - Metal-sash awning windows with operable cranks- Moderate Adverse (Long-term)
  - Open metal stairs and catwalks- Moderate Adverse (Long-term)
  - Concrete flooring- Moderate Adverse (Long-term)
  - Clay Tile Flooring (1st Floor) - Minor Adverse (Long-term)
  - Exposed I-beams- Minor Adverse (Long-term)
  - Conveyor system and scales- Moderate Adverse (Long-term)
  - Boilers and Water Softeners- Moderate Adverse (Long-term)
  - Coal bunkers- Moderate Adverse (Long-term)
  - Skip hoist system- Moderate Adverse (Long-term)
  - Stair halls inside the two primary entrances including the streamlined metal railings, marble wainscoting, multi light doors, and light fixtures- Minor Adverse (Long-term)

- Coal Yard Character-Defining Features
  - Open yard- Moderate Adverse (Long-term)
  - Perimeter stone-clad wall- Minor Adverse
  - Crane operator control booth- Moderate Adverse (Long-term)
  - Coal conveyor belt equipment – Moderate Adverse (Long-term)

The Georgetown Historic District

Georgetown, particularly in the portion along the Potomac River below M Street, NW has undergone a steady transformation in the late twentieth and early twenty-first centuries from an industrial zone to an extension of the high end housing, retail, and office district that predominates in the rest of the historic former Maryland town. The West Heating Plant is perhaps the last sizable remainder of Georgetown's industrial legacy, although its 110-foot height is anomalous for the low and midrise scale of buildings elsewhere in the historic district. Despite the disappearance of industry, the Georgetown Historic District is characterized as a fine grained mixture of land uses constrained and defined by its own street grid and separation from the L'Enfant's monumental Washington by the outflow of Rock Creek into the Potomac River. The most noticeable impact on the Georgetown Historic District by the EA's reasonably foreseeable development scenario would be the replacement of the Coal Yard, now largely

hidden from view by the stone perimeter wall with an increment of new development, limited to 60 feet in height or half of that of the West Heating Plant building. Such infill development would be very similar to the pattern that in the area that prevailed in the last several decades.

For purposes of this NEPA analysis, the reasonably foreseeable development scenario would have a minor adverse long-term impact and (due to construction) a minor adverse short-term impact on the Georgetown Historic District and National Historic Landmark.

The C&O Canal Historic District and Locks 1 and 2

The setting of the C&O Canal and its locks would be unchanged as the footprint of the West Heating Plant and the stone perimeter wall that occupy the northern portion of the parcel and form a southern boundary of the canal would be unchanged. The NPS maintains custody and accountability over the retaining wall comprising the southern edge of the C&O Canal at the northern edge of the property. The West Heating Plant property is not within the C&O Canal NPS' boundaries as set forth in the map promulgated by the NPS pursuant to 16 U.S.C. Section 410y-1(a). However, a requirement to maintain the landscaped north and east buffers as well as the Rock Creek seawall will be included in the transfer documents. GSA lacks the authority to require public access to any portion of the West Heating Plant property after disposal. However, conditions may be imposed by actions of the DC preservation, zoning, and land use permitting processes after disposal has occurred. Therefore, the reasonably foreseeable development scenario would have a negligible impact and (due to construction) a minor adverse short term impact on the C&O Canal Historic District and Lock 1.

The Rock Creek and Potomac Parkway Historic District

The section of the Rock Creek and Potomac Parkway that abuts the diagonal, eastern stone perimeter wall of the West Heating Plant is comparatively isolated due to the Heating Plant itself and the supports for the Whitehurst Freeway and its interchanges and connection to K Street, NW. The reasonably foreseeable development scenario does not include any encroachment on the riparian buffer of Rock Creek. A requirement to maintain the landscaped north and east buffers as well as the Rock Creek seawall will be included in the transfer documents. GSA lacks the authority to require public access to any portion of the West Heating Plant property after disposal. However, conditions may be imposed by actions of the DC preservation, zoning, and land use permitting processes after disposal has occurred. Therefore the reasonably foreseeable development scenario would have a negligible impact and (due to construction) a minor adverse short-term impact on the Rock Creek and Potomac Parkway Historic District.

The Godey Lime Kilns

The Godey Lime Kilns located beneath a freeway interchange at 27th and K Street, NW are extremely isolated and would be little impacted by any development at the West Heating Plant. Therefore, the reasonably foreseeable development scenario would have a negligible impact on the Godey Lime Kilns.

Best Management Practices and Review Processes

The actual reuse and redevelopment of the West Heating Plant parcel, once it is sold at a competitive public auction and is no longer under U.S. Government ownership will be subject to several public processes:

- The action of the District of Columbia Zoning Commission (to zone the property).
    - The Zoning Commission is an independent, quasi-judicial body. Created by the Zoning Act of 1920, as amended, the Zoning Commission is charged with preparing, adopting, and subsequently amending the Zoning Regulations and Zoning Map in a means not inconsistent with the Comprehensive Plan for the National Capital area. Three members of the Zoning Commission are residents of the District of Columbia appointed by the Mayor and confirmed by the Council. The fourth member of the Zoning Commission is the Architect of the Capitol (or his/her representative). The fifth Zoning Commission member is the Director of the NPS (or his/her representative).

- The review of the DCOP.
    - The DCOP prepares the city's comprehensive plan, performs planning for neighborhoods, corridors, districts, historic preservation, public facilities, parks and open spaces, and individual sites. In addition, the office engages in urban design, land use, and historic preservation review. The DCOP also conducts historic resources research and community visioning, and manages, analyzes, maps, and disseminates spatial and United States Census data.

- The review of the District of Columbia Historic Preservation Review Board.
    - The Historic Preservation Review Board is the official body of advisors appointed by the Mayor to guide the government and public on preservation matters in the District of Columbia. As the State Review Board, the Historic Preservation Review Board also assists with the implementation of Federal preservation programs and the review of Federal projects in the District of Columbia.

- The review of the DC SHPO.
    - Designated by the Mayor, the DC SHPO for the District of Columbia, David Maloney, is responsible for protecting the District's unique historical, archaeological, architectural, and cultural resources. This responsibility is shared with each Federal agency that administers properties or undertakes construction activities in Washington, DC.

- The oversight of the Mayor's Special Agent for Historic Preservation, as applicable.
    - Under the Historic Landmark and Historic District Protection Act, the Mayor's Agent is required to hold a public hearing on a permit application in the following instances:
        - Demolition of a historic landmark or building contributing to the character of a historic district.

- Subdivision of a historic landmark property (including division or assembly of land).
- In cases where the applicant claims unreasonable economic hardship or proposes to construct a project of "special merit."
- Upon request of an applicant having received a recommendation for denial from the Historic Preservation Review Board or U.S. Commission of Fine Arts.
- In any other case deemed appropriate by the Mayor.
- For a permit to be issued after the public hearing, the Mayor's Agent must find that failure to issue the permit would result in unreasonable economic hardship to the owner, or that issuance of the permit is necessary in the public interest.
- Necessary in the public interest" is defined to mean consistent with the purposes of the Historic Landmark and Historic District Protection Act, or necessary to allow the construction of a project of special merit.
- A "project of special merit" is defined to mean a plan or building having significant benefits to the District of Columbia or to the community by virtue of exemplary architecture, specific features of land planning, or social or other benefits having a high priority for community services.

- The review and permitting authority of the Old Georgetown Board of the U.S. Commission of Fine Arts.
  - The Old Georgetown Act (Public Law 81-808) was passed on September 22, 1950. The Act defined the boundaries of Georgetown, and officially designated the area a historic district. The Old Georgetown Act also gave the Commission of Fine Arts the authority to appoint an advisory committee, the Old Georgetown Board, to conduct design reviews of semipublic and private structures within Georgetown's boundaries. The Board is comprised of three architects who serve without compensation for three-year terms. Their recommendations for concept and permit applications are compiled into the Old Georgetown Appendix and forwarded to the U.S. Commission of Fine Arts for final approval.

- The review by the U.S. Commission of Fine Arts under the Shipstead-Luce Act (in addition to review by the Old Georgetown Board of the U.S. Commission of Fine Arts)
  - The Shipstead-Luce Act (Public Law 71-231 and Public Law 76-248) was passed on May 16, 1930. The Act gave the Commission of Fine Arts authority to review designs of private construction in certain places within the District of Columbia, specifically where construction abuts Rock Creek Park and Rock Creek and Potomac Parkways. Proposed projects subject to review by the Commission of Fine Arts are reviewed by either the full commission or by commission staff, depending on the scope of the project.
  - The Shipstead-Luce Act tasks the Commission of Fine Arts to evaluate the proposed projects so far as they relate to height and appearance, color, and texture of the materials of exterior construction, and prevent reasonably avoidable impairment of the public values belonging to the parks or buildings covered under

the Act, and take actions that shall, in the commission's judgment, effect reasonable compliance with such recommendations.

3.7.3 What Mitigation Measures Would be Taken to Reduce Impacts to Historic Resources?

Before the West Heating Plant parcel sale is executed, (and before the NEPA process can be finalized), compliance with the procedures of Section 106 of the NHPA is required. Section 106 compliance by GSA was informally introduced to the DC SHPO in October 2011 and was formally initiated by letters to the DC SHPO and the ACHP on May 23, 2012. This correspondence is included as Appendix A to the EA. GSA has consulted with the DC SHPO, the ACHP, and Consulting Parties on the historic preservation covenants to be placed in the transfer documents to afford protection to the West Heating Plant as a historic property and meet the requirements of Section 106 of the NHPA (see Appendix F). GSA policy implementing the NHPA is clear: at a minimum, historic preservation covenants must require that alterations be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation) and covenants must be supported by enforcement provisions. The draft covenant, to be included when the deed is transferred to the purchaser, is provided in the EA in Appendix F. GSA will conclude the Section 106 process with the DC SHPO and the Advisory Council on Historic Preservation prior to the signing of a FONSI, if such is warranted. GSA has (a) developed documentation in a Determination of Eligibility form describing the West Heating Plant's significance and its contributing features and (b) sought concurrence in a determination of No Adverse Effect under Section106 based upon the inclusion of historic preservation covenants, which will impose upon the buyer the obligation to develop the property in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Rehabilitation), and subject to the review of the DC Historic Preservation Review Board, the U.S. Commission of Fine Arts, the Old Georgetown Board, the DC Zoning Commission, and other relevant public processes, all of which allow for extensive citizen comment.

3.8 VISUAL RESOURCES

3.8.1 What Are the Visual Resources in the Project Area?

The West Heating Plant, at 110 feet tall, although at a comparatively low elevation, is a monumental presence within the predominantly low and mid-rise, fine-grained scale of Georgetown. Views along the C&O Canal are significant but are not greatly impacted by the presence of the West Heating Plant. Views along the lowest outreach of Rock Creek are primarily impacted by the Whitehurst Freeway and its access ramps. The West Heating Plant is slightly visible from M Street, NW above where it is blocked by the Four Seasons Hotel, nor is it very prominent from directly across 29th Street due to the narrowness of the street width. It tends to come in and out of view as various view corridors open from the eastern elevated stretch of the Pennsylvania Avenue Bridge or the boatyard north of Watergate where the elevated highway ramps do not appear to loom as large as they do at closer proximity.

The major viewshed of the West Heating Plant is from Rock Creek and Potomac Parkway – a historic property. The section of the Rock Creek Park that abuts the eastern stone perimeter wall

of the West Heating Plant is comparatively isolated due to the West Heating Plant itself and the supports for the Whitehurst Freeway and its interchanges and connection to K Street, NW. However, the rusticated stone base of the West Heating Plant at its eastern elevation is oddly consistent with the palette of stone ramparts and walls that are contributing features of the Rock Creek and Potomac Parkway. The base also creates an isolated greensward between the plant and Rock Creek as well as a frame for the southern bank of the C&O Canal at its most eastward stretch.

As a decommissioned industrial building the West Heating Plant is not currently a major light source at night so its visual presence after hours is less than its bulk might imply. It does require lights at the roof to comply with air safety regulations.

3.8.2 What Are the Impacts to Visual Resources?

No-Action Alternative

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel; therefore, the No-Action Alternative would result in no changes to the existing viewshed.

Disposal Alternative – Direct Impacts

There would be no direct impacts to visual resources or neighborhood character from disposal of the West Heating Plant parcel.

Disposal Alternative – Indirect Impacts

In a broader context, the impact to visual resources of the reasonably foreseeable development scenario and any future reuse or redevelopment scheme depends upon the continuation of the West Heating Plant's integrity of location, setting, materials, workmanship, feeling, and association. The West Heating Plant building's monumental quality with its Moderne stylistic influences of clean, streamlined surfaces, curved and embellished corners, and spans of industrial windows would be impacted not only by the treatment of the exterior and interior of the main building but also by potential new development anticipated in this analysis scenario that would be accommodated in the former Coal Yard. Due to the assumption of W-2 zoning, this development cannot be higher than 60 feet compared to the 110-foot height of the West Heating Plant. The reasonably foreseeable development scenario cannot, of necessity, be detailed as to the configuration or layout of the additional development potential represented by the Coal Yard portion of the parcel.

The existing heating plant has the appearance of a freestanding monolith, and the height and verticality of its design gives it a monumental presence from many viewpoints to the south (despite the intrusion of the freeway), the east, and even along the C&O Canal. New infill construction on the Coal Yard part of the parcel would have the potential to adversely impact the setting of the heating plant building and views towards it. The avoidance of adverse effects to the visual aspect of the Heating Plant as a monumental building rising above its surroundings

would be an issue for subsequent post-sale preservation and design reviews of any reuse and redevelopment proposal. As evaluated using the methodology outlined in this EA and in accordance with CEQ regulations, the impacts to visual resources, associated only with the West Heating Plant building, would be long-term, moderate, and adverse.

Indirect impacts associated with redevelopment of the site could result in changes to the neighborhood character because the existing use of the property would likely change. However, it is assumed that any new development would be consistent with the surrounding land use in which the infill of new mid-rise housing or office buildings on available sites has been a recurrent pattern in the Georgetown area. Therefore, the overall neighborhood character would not change as a result of new redevelopment.

3.8.3 What Mitigation Measures Would be Taken to Reduce Impacts to Visual Resources?

No mitigation measures are required for disposal of the West Heating Plant parcel, since historic preservation covenants referencing consistency with the Secretary of the Interior's Standards (Rehabilitation) will result in a No Adverse Effect determination that does not require further Section 106 consultation prior to sale.. With regard to indirect impacts, the future owner would be required to submit any development reuse or development proposal through the following public processes which can be anticipated to review and mandate feasible protection to historic, visual, and neighborhood character values.

- The action of the District of Columbia Zoning Commission.
- The review of the DCOP.
- The review of the District of Columbia Historic Preservation Review Board.
- The review of the DC SHPO.
- The oversight of the Mayor's Special Agent for Historic Preservation, if applicable.
- The review and permitting authority of the Old Georgetown Board of the U.S. Commission of Fine Arts.
- The review and permitting authority of the U.S. Commission of Fine Arts under the Shipstead-Luce Act.

3.9 NOISE

3.9.1 How Is Noise Described and What Is the Noise Environment in the Project Area?

The extent to which individuals are affected by noise is controlled by several factors, including the duration and frequency of sound; the distance between the sound source and the receptor; the intervening natural or man-made barriers or structures; and the ambient environment. Typically, levels of noise are measured in units called decibels.

The "A-weighted" decibel (dBA) is a unit of measure used to express the relative loudness of sounds in the air as perceived by the human ear. The dBA scale de-emphasizes the very low and the very high frequencies and emphasizes the middle frequencies, thereby closely approximating

the frequency response of the human ear. Common noise sources and their sound levels are described in Table 3-13.

Table 3-13 Common Noise Sources and Sound Levels.

Source	Sound Level (dBA)
Near large jet at takeoff	140
Air-raid siren	130
Threshold of pain	120
Thunder or sonic boom	110
Garbage or trailer truck at roadside	100
Power lawn mower at 5 feet	90
Alarm clock or vacuum cleaner	80
Freeway traffic at 50 feet	70
Conversational speech	60
Average residence	50
Bedroom	40
Soft whisper at 15 feet	30
Rustle of leaves	20
Breathing	10
Threshold of hearing	0

Source: Adapted from U.S. National Bureau of Standards Handbook 119, 1976.

Human ability to perceive change in noise levels varies widely from person to person, as do responses to perceived changes. Generally, a 3 dBA change in noise level would be barely perceptible to most listeners, whereas a 10 dBA change is normally perceived as doubling (or halving) of noise levels and is considered a substantial change. These thresholds permit direct estimation of an individual's probable perception of changes in noise levels.

Section 5 of the Washington, DC Noise Control Act of 1977 permits noise resulting from construction or demolition (excluding pile drivers) activity between 7:00 AM and 7:00 PM on any weekday. Per Section 5 of the DC Noise Control Act of 1977, DC Law 2-53, 24 DCR 5293 (December 30, 1977); as amended by Section 2 of the Noise Control Amendment Act of 1996, DC Law 11-161, 43 DCR 3727 (July 19, 1996), noise levels for construction or demolition activities are not permitted to exceed 80 dBA unless granted variance by the Mayor of the District of Columbia.

Maximum sound levels are established in the District of Columbia Municipal Regulations (Chapter 27; Section 2701) which are applicable for the day and night in specific zoning locations (Table 3-14). These maximum levels would be applicable to the project area after disposal of the property. Although the project area is not zoned, the area adjacent to it is considered W-2, mixed use. Assuming there could be some residential development after

disposal of the property, the maximum daytime noise level for the parcel would be 60 dBA for daytime and 55 dBA for nighttime.

Table 3-14 Noise Abatement Thresholds.

Zone	Maximum Noise Level (dBA)	
	Daytime	Nighttime
Commercial or light manufacturing zone	65	60
Industrial Zone	70	65
Residential, special purpose, or waterfront zone	60	55

Source: DC Municipal Regulations, Chapter 27; Section 2701.

Table 3-15 displays the general noise level produced by construction equipment with and without noise control measures.

Table 3-15 Typical Construction Equipment Noise Levels (dBA at 50 feet).

Equipment Type	Without Noise Control	With Feasible Noise Control[1]
Earthmoving:		
Front Loaders	79	75
Backhoes	85	75
Dozers	80	75
Tractors	80	75
Scrapers	88	80
Graders	85	75
Truck	91	75
Pavers	89	80
Material Handling:		
Concrete Mixers	85	75
Concrete Pumps	82	75
Cranes	83	75
Derricks	88	75
Stationary:		
Pumps	76	75
Generators	78	75
Compressors	81	75
Impact:		
Pile Drivers	101	95
Jack Hammers	88	75
Pneumatic Tools	86	80
Other:		
Saws	78	75
Vibrators	76	75

1. Estimated levels obtainable by selecting quieter procedures or machines and implementing noise control features requiring no major redesign or extreme cost. Source: USEPA, 1971.

The project area exists within a heavily developed, urban area. Noise sources in the study area include vehicular traffic along adjacent streets – primarily along the Whitehurst Freeway and 29th Street, NW. There are no noise-generating activities occurring on the parcel. Potentially sensitive noise receptors in the project vicinity include residential, commercial (hotel), and office facilities along 29th Street, NW to the west and north of the parcel. The closest receptor is approximately 500 feet from the parcel.

3.9.2 What Are the Noise Impacts?

No-Action Alternative

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel; therefore, the No-Action Alternative would result in no changes to existing noise conditions. There are no noise-generating activities currently being produced at the site.

Disposal Alternative – Direct Impacts

There would be no direct noise impacts from the disposal of the West Heating Plant Parcel. The heating plant is no longer in operation, and no noise generating activities currently occur on the site.

Disposal Alternative – Indirect Impacts

As described earlier in Chapter 3, GSA has developed a reasonably foreseeable development scenario that could occur on the West Heating Plant parcel after disposal. The resulting construction could result in noise impacts, but these impacts would be considered indirect impacts from the proposed action, which is disposal. A few basic assumptions have been factored into the analysis of potential indirect impacts from noise due to future development, which are: 1) the developer would be required to comply with the District of Columbia Noise Control Act of 1977 and the DC Noise Ordinance.

There would be minor to moderate, temporary indirect impacts from the potential future redevelopment of the parcel. Indirect noise impacts would primarily be due to construction activities associated with redevelopment after GSA has disposed of the property.

Noise resulting from construction equipment would vary based on the equipment being used at any time. All construction activities would need to be permitted by the District and therefore would be required to abide by noise control regulations, which would reduce the impact of construction equipment on the overall noise environment in the vicinity of the West Heating Plant parcel. Temporary, indirect impacts from construction would meet the requirements set forth in the District of Columbia Noise Control Act of 1977, as amended.

Indirect, long-term noise impacts could also be introduced through the establishment of development types that are not currently present on the parcel, such as a residence or retail, as described previously in Chapter 3 of this EA, which identifies a reasonably foreseeable development scenario for the site. However, the noise levels would most likely be minor and would not change the overall ambient noise level near the project area. Similarly, the new uses would introduce additional vehicular traffic to the area (see Section 3.2, Transportation), which would also be a long-term indirect impact; however, the additional traffic noise would be consistent with the existing urban setting of the parcel and vicinity and would not significantly change noise levels above ambient conditions.

Best Management Practices and Review Processes

The future owner/developer would be required to abide by the DC Noise Ordinance during construction activities and may implement best management practices, such as limiting construction noise to daytime hours, or utilizing noise buffers on equipment, to minimize potential impacts to nearby residents from noise.

3.9.3 What Mitigation Measures Would be Taken to Reduce Impacts from Noise?

There would be no mitigation measures required for disposal of the West Heating Plant parcel.

3.10 HAZARDOUS MATERIALS AND WASTE/PUBLIC HEALTH AND SAFETY

A hazardous substance is any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either on its own or through interaction with other factors. The terms "hazardous material," "toxic substance," and "hazardous waste" are used in this section first to emphasize that they are all hazardous substances that may present a substantial threat to public health, welfare, and the environment and second because each is defined in the relevant Federal regulations (i.e., the terms are not equivalent or interchangeable). Hazardous materials and wastes are substances that pose a potential threat to human health and safety or the environment due to their quantity, concentration, or physical and chemical properties. Hazardous materials and wastes are characterized by their ignitability, corrosivity, reactivity, and toxicity.

Hazardous materials, toxic substances, and hazardous wastes are regulated under various laws including but not limited to: Clean Water Act; Solid Waste Disposal Act (SWDA); Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Clean Air Act; Toxic Substances Control Act (TSCA); and Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) and regulations promulgated under the Occupational Safety and Health Act (OSHA) and U.S. Department of Transportation Research and Special Programs Administration. GSA is required to comply with these laws as well as all relevant and applicable Federal and state regulations, and Executive Orders.

3.10.1 What Hazardous Materials and Public Health and Safety Issues are in the Project Area?

Three separate studies were conducted on the West Heating Plant parcel, including a Phase I ESA, a Phase II ESA, and a Human Health Risk Assessment, and DDOE concurred with the approach taken to assess hazardous materials on the site and all comments from DDOE were addressed (Personal communication, DDOE, 2012). The Phase I ESA consisted of an initial assessment of potential hazardous materials on the site and was completed on March 13, 2000 (CETROM Consulting Engineering, Ltd., 2000). A Phase II ESA was completed on the West Heating Plant parcel on July 14, 2010, and report findings indicated the presence of hazardous substances on the site (Analytical Services, Incorporated, 2010). Sampling was performed in accordance with the approved Sampling Plan and with American Society for Testing Materials *E 1903-97 Standard Guide for Environmental Site Assessments.* Soil screening and groundwater protection risk based criteria (RBC) published by the USEPA Region III were utilized to evaluate analytical results as well as soil and groundwater clean-up standards within the DC Municipal Regulations (Analytical Services, Incorporated, 2010).

A Human Health Risk Assessment was also completed on October 28, 2011, to determine whether potentially unacceptable human health risks exist at the site based on the results of soil and groundwater sampling from the Phase II ESA (Analytical Services, Incorporated, 2011). The risk assessment was conducted in accordance with USEPA guidance documents. Populations that were considered for the risk assessment included on-site and off-site workers, off-site adult residents, and off-site child residents. Potential methods of exposure considered were incidental ingestion of soil and dermal contact with soil. The Human Health and Risk Assessment concluded that no unacceptable carcinogenic or non-carcinogenic risks were identified for any of the on-site or off-site populations for substances detected in soil and groundwater during the Phase II ESA (Analytical Services, Incorporated, 2011). A summary of the findings from both assessments is provided below (see Appendix B for the full report of the Human Health Risk Assessment). It should be noted that the risk assessment is based on current use, not future use.

It should be noted that conveyance of the underground steam tunnels adjacent to the West Heating Plant site are not part of the proposed action; however, the developer would be required to cap the tunnels. Based on historical knowledge and maintenance work, including repair of pipe stanchions, pipe anchors, expansion joints, and pipe insulation, that has been conducted on the tunnels over the past 15 years, GSA has determined that there are no asbestos-containing materials present in these tunnels.

Phase II Environmental Site Assessment Results – Soil and Groundwater

Subsurface Investigations (Soil and Groundwater)

Four areas were sampled on the West Heating Plant parcel: 1) Ash Truck Rack, 2) Former Coal Yard, 3) Tank Yard, and 4) the Facility Perimeter for soil and groundwater testing. Soil samples were obtained from three soil borings (SB-1, SB-2, SB-3) and four well borings (MW-3, MW-4, MW-5, and MW-6) (see Figure 3-15 and Figure 3-16). Soil samples were first screened with a photo ionization detector for the presence of volatile organic compound vapors; based on these results samples were submitted for laboratory analysis. At least one soil sample was collected from each soil boring location and monitoring well location and submitted for the following analytical parameters: 1) total petroleum hydrocarbons (TPH) for gasoline range organics (TPH-GRO) and diesel range organics (TPH-DRO); 2) Polychlorinated biphenyls (PCBs); 3) Pesticides; 4) Herbicides; 5) RCRA 8 metals; 6) Semi-volatile organic compounds; and 7) pH. Each groundwater sample was also tested for the same suite of parameters. Groundwater samples were collected from monitor wells that were deemed to lie in a down gradient position relative to the majority of the site (Analytical Services, Incorporated, 2010); MW-3 was not analyzed for groundwater because it was dry at the time the Phase II ESA sampling was conducted (Analytical Services, Incorporated, 2011).

Soil and groundwater sampling identified arsenic and benzo(a) pyrene concentrations in soil that exceeded USEPA Region III Risk Based Concentrations for industrial soil. Detection of barium, chromium, lead, and mercury were identified within groundwater at concentrations above the DC Municipal "early warning values." Detection of chromium, lead, and mercury were identified at one well location at concentrations above the DC Municipal Criterion. Tables 3-16 through 3-22 summarize the findings.

Figure 3-15 Soil Borings.

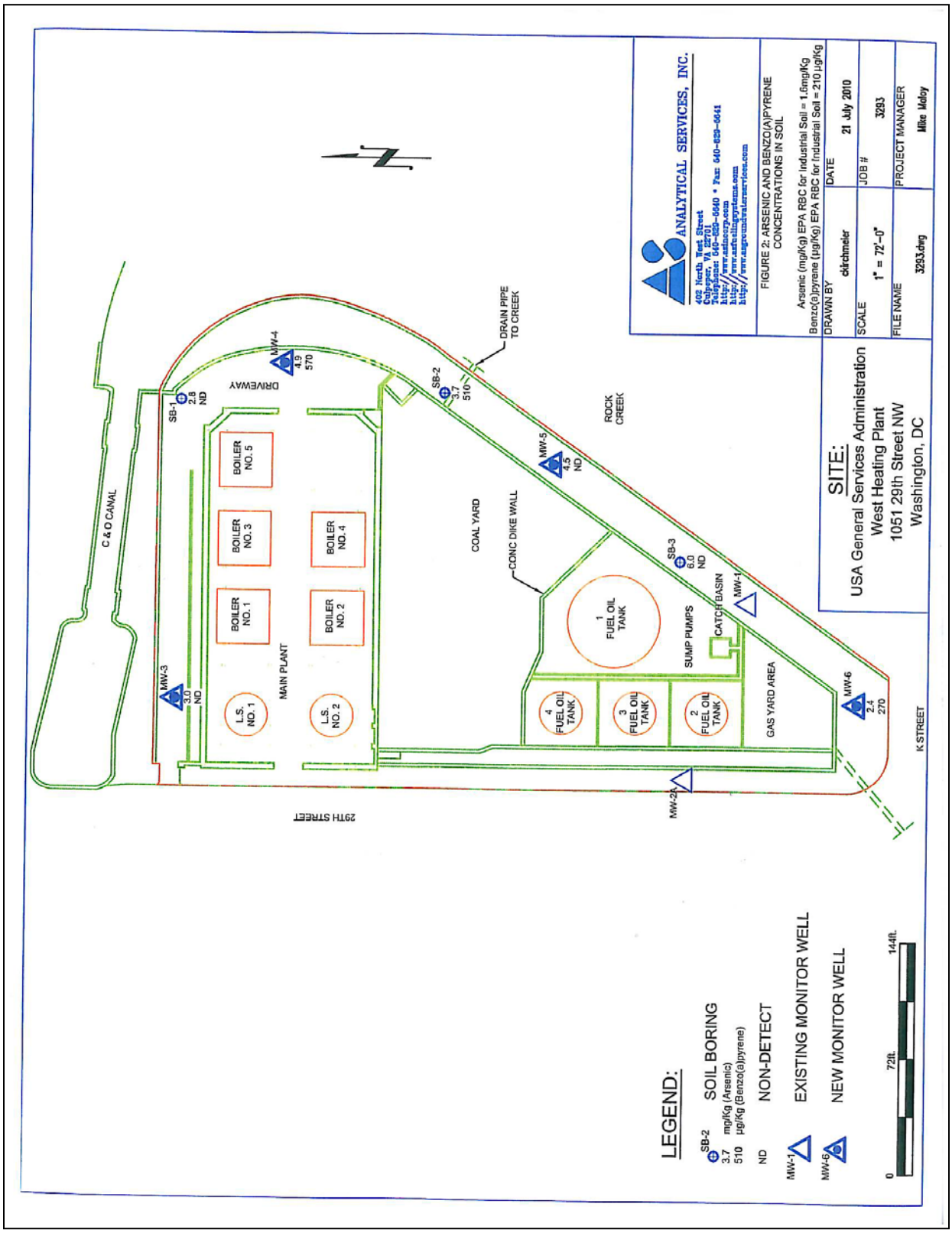
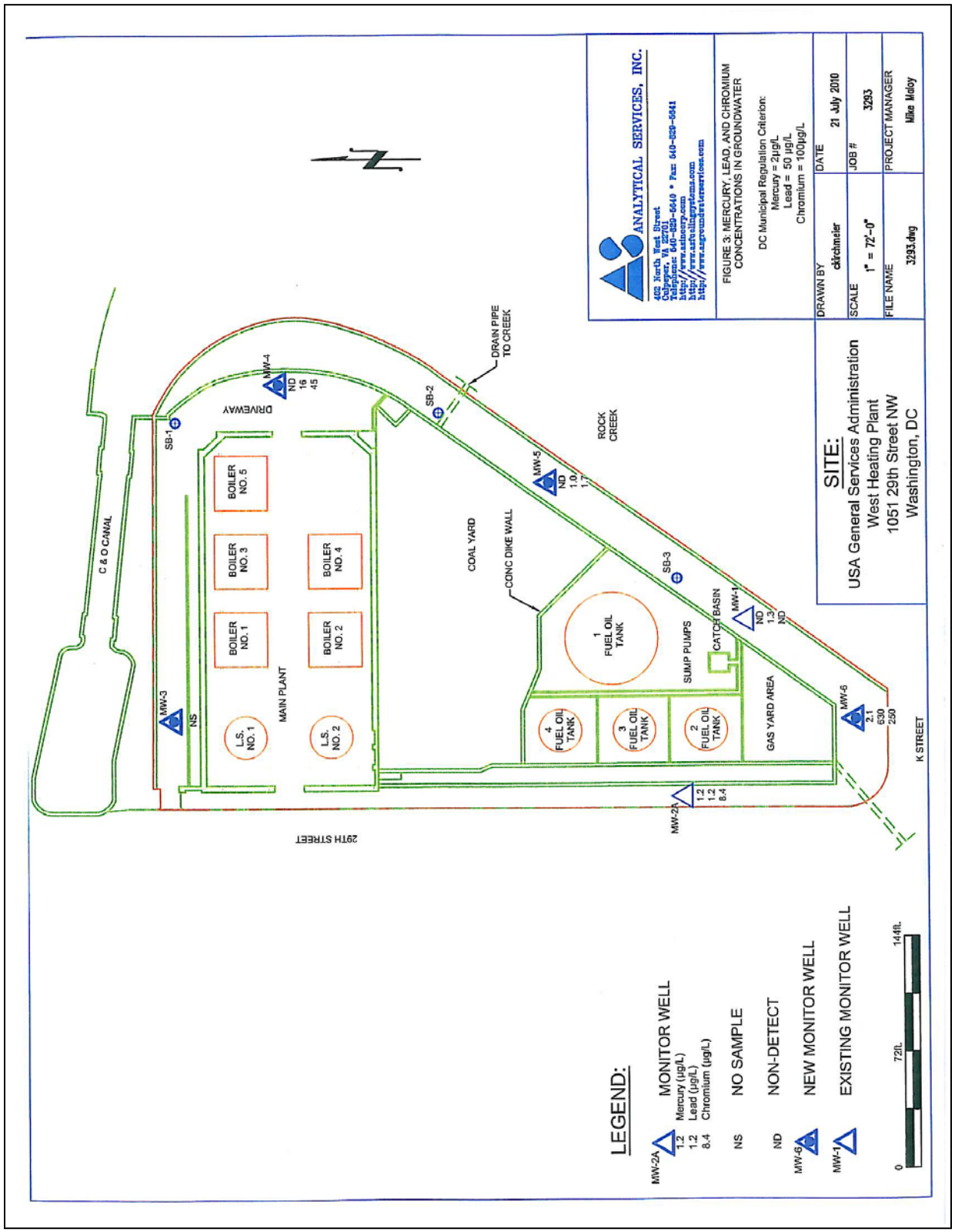


Figure 3-16 Groundwater Samples.



Ash Truck Rack – Soil

Table 3-16 Soil Analytical Summary - Ash Truck Rack.

Sample ID and Depth Interval	Arsenic (mg/kg)	Benzo (A) pyrene (µg/kg)
MW 4-1 (1-3 feet bgs)	**4.9**	NA**
MW 4-2 (5-7 feet bgs)	**4.1**	**570**
MW 4-5 (20-22 feet bgs)	1.2	ND***
Industrial Soil*	1.6	210

Notes: *Industrial Soil = EPA Region III RBCs for Industrial Soil (May 2010)
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
feet bgs = feet below ground surface
**NA= not analyzed
***ND= non detect, meaning that concentrations were below levels detectable by laboratory equipment.

Additionally, a TPH concentration of 28 mg/kg was detected from soil sample (MW 4-2).

Ash Truck Rack – Groundwater

Table 3-17 Groundwater Detection Summary – Ash Truck Rack (µg/L).

	Barium	Chromium	Lead
MW-4	**390**	**45**	**16**
MW-X	**410**	**59**	**20**
Criterion*	1,000	100	50
Early Warning Value*	200	10	10

Notes: MW-X is duplicate sample of MW-4
*: Source: DC Municipal Regulations, Section 1155.3.
µg/L = micrograms per liter

Former Coal Yard – Soil

Table 3-17 Soil Analytical Summary – Former Coal Yard.

Sample ID and Depth Interval	Arsenic (mg/kg)	Benzo (A) pyrene (µg/kg)
SB2-1 (0-2 feet bgs)	**3.7**	**650**
SB2-4 (15-17 feet bgs)	NA	**490**
MW5-1 (1-3 feet bgs)	**4.5**	NA
MW5-4 (15-17 feet bgs)	**2.9**	ND
Industrial Soil*	1.6	210

Notes: *Industrial Soil = EPA Region III RBCs for Industrial Soil (May 2010)
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
NA = not analyzed; ND = non-detect
feet bgs = feet below ground surface

Former Coal Yard – Groundwater

Table 3-18 Groundwater Detection Summary – Former Coal Yard (µg/L).

	Barium	**Chromium**	**Lead**
MW-5	**390**	**45**	**16**
Criterion*	1,000	100	50
Early Warning Value*	200	10	10

Notes: *: Source: DC Municipal Regulations, Section 1155.3.
µg/L = micrograms per liter

Tank Yard – Soil

Table 3-20 Soil Analytical Summary - Tank Yard.

Sample ID and Depth Interval	**Arsenic (mg/kg)**
SB3-3 (10-12 feet bgs)	**6.0**
Industrial Soil*	1.6

Notes: *Industrial Soil = EPA Region III RBCs for Industrial Soil (May 2010)
mg/kg = milligrams per kilogram
feet bgs = feet below ground surface

Tank Yard – Groundwater

Concentrations of barium, chromium, and lead were detected from groundwater sampled from MW-5; however, all concentrations were found to be well below the Early Warning Criteria established by the DC Municipal Regulations, Section 1155.3.

Facility Perimeter – Soil

Table 3-19 Soil Analytical Summary - Facility Perimeter.

Sample ID and Depth Interval	**Arsenic (mg/kg)**	**Benzo (A) pyrene (µg/kg)**
MW3-1 (1-3 bgs)	**3.0**	NA
MW3-4 (15-17 bgs)	**2.3**	ND
MW6-2 (5-7 feet bgs)	**2.4**	**270**
Industrial Soil*	1.6	210

Notes: *Industrial Soil = EPA Region III RBCs for Industrial Soil (May 2010)
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
feet bgs = feet below ground surface
NA = not analyzed
ND = non-detect

Site Perimeter – Groundwater

Table 3-20 Groundwater Detection Summary – Site Perimeter (µg/L).

	Barium	**Chromium**	**Lead**	**Mercury**
MW -2A	340	8.4	1.2	1.2
MW6	320	84	**68**	**4.1**
MW-4	390	45	16	ND
MW-X	410	59	20	ND
Resample June 15, 2010				
MW6	990	**250**	**630**	**2.1**
MWY	810	**170**	**550**	ND
Criterion*	1,000	100	50	2
Early Warning Value*	200	10	10	0.05

Notes: *: Source: DC Municipal Regulations, Section 1155.3.
µg/L = micrograms per liter

Human Health Risk Assessment Results – Soil and Groundwater

The Human Health Risk Assessment concluded that no unacceptable risks were identified for any of the on-site or off-site populations related to the analytes detected in soil and groundwater during the Phase II study, as described in the tables above. The analytical data from the Phase II study were compared to human health risk-based screening levels to identify analytes whose concentrations warranted additional evaluation. Human health risk-based screening levels are conservative analyte concentrations below which risks to human health are not expected.

Metals are naturally occurring elements in the soil, and their presence in the samples is expected. It is possible that some of detected metal concentrations in the soil samples may be related to prior site activities; however, all of the detected metals concentrations fall within the range of normal background conditions, so their presence in the soil samples may reflect natural conditions (see Appendix B). The presence of metals in the groundwater also likely reflects natural conditions (Analytical Services, Incorporated, 2011).

Phase II Environmental Site Assessment Results - Others

Site Sumps

A total of six sumps were identified and evaluated on the West Heating Plant parcel during the Phase II study. Sediments within the gas yard sump, the sluice drain (coal yard sump discharge point), and the floor drain were found to be impacted with petroleum hydrocarbons. Metals concentrations within the sluice drain and the basement floor drain were noted to exceed RBC for industrial sites and PCB concentrations were also identified. The toxicity characteristic leaching procedure (TCLP) concentration for cadmium approached hazardous levels. Summary tables are provided below.

Table 3-21 Sediment Detection Summary – RCRA 8 Metals (mg/kg).

Sample ID	Arsenic	Lead	TPH-DRO
Basement A	**31**	**900**	150
Basement B	**28**	**1,700**	1,700
Gas Yard Sump	**20**	280	510
Industrial*	1.6	800	---
DC Municipal Regulation**	---	---	100

Notes: *: EPA Region III RBCs for Industrial Soil (May 2010)
** DC Municipal Regulation Section 6208
Mg/kg – milligrams per kilogram

Upon receiving the analytical results high concentrations of metals were identified and two samples were selected for further analysis using TCLP to better characterize the nature of the contaminants and compare them to hazardous waste levels (see below). No analytes were found to exceed the hazardous criteria; however, cadmium was noted to be close to that criterion.

Table 3-22 Sediment Detection Summary – TCLP RCRA 8 Metals (mg/L).

Sample ID	Barium	Cadmium	Lead
Basement B	ND	0.81	0.562
Gas Yard Sump	1.1	ND	0.077
Hazardous Criteria	100	1.0	5

Notes: Hazardous criteria: EPA 40 CFR Section 261.24 Table 1 Maximum Concentration of Contaminants for the Toxicity Characteristic
mg/L – milligrams per liter

Transformers

Transformers are present on all floors of the heating plant building, including the basement. Transformers at the site were primarily found to have non-PCB status stickers or were of the dry-design type. Sampling of concrete was performed at two locations near equipment that had PCB containing stickers. The sampling results indicated the presence of PCBs, as shown in the table below.

Table 3-23 PCB Analytic Results for Transformer Samples – Concrete (mg/kg).

Sample ID	PCB-1254 (mg/kg)
PCB 1	5,400
PCB 2	19

Notes: mg/kg – milligrams per kilogram

Fire Bricks

Samples were collected from the interior of each of the five boilers within the facility. Arsenic concentrations were detected in fire brick samples that exceed RBC industrial soil values. To better assess lead and arsenic concentrations, Sample Boiler 4-1, which had the highest concentrations among the fire brick samples analyzed for total arsenic and lead, was submitted

for TCLP RCRA 8 metals analysis. Based on the analytical results the fire brick sample submitted was not deemed to possess hazardous concentrations of RCRA metals, as shown in the summary table below.

Table 3-24 Fire Brick Detection Summary TCLP RCRA 8 Metals (mg/L).

	Barium	Cadmium	Lead
Boiler 4-1	ND	ND	0.132
Hazardous Criteria	100	1.0	5

Notes: Hazardous criteria: EPA 40 CFR Section 261.24 Table 1 Maximum Concentration of Contaminants for the Toxicity Characteristic
mg/L= milligram per liter

Lead Based Paint

Lead based paint was observed in various conditions throughout the heat plant building, largely in poor condition. Based on the large quantities of peeling, flaking, and/or chipping lead based paint observed, lead dust contamination is likely present throughout the building.

Above Ground Storage Tanks

There are six storage tanks located on the site. One 500,000 gallon (Tank #1), three 100,000 gallon (Tank #2, Tank #3, and Tank #4), and one 2,000 gallon tanks are located in the tank yard adjacent to the heating plant building. One 25,000 gallon tank is located on the fifth floor, referred to as the "day tank." All of the tanks were used to store number two (#2) fuel oil except for the 2,000 gallon tank, which was used to store diesel fuel. All of the tanks are located above ground. Inspection results recognized the need for emergency venting of the 2,000 gallon tank. Recommendations were also made to confirm that the facility has a proper operational permit for the use of the above ground storage tanks, and that the facility should adhere to the Spill Prevention Control and Countermeasures (SPCC) plan. Recommendations were made to drain tanks and piping that are not in use, and to valve shut piping extending from the tanks since they are no longer in use.

Asbestos-containing Materials (ACM)

ACM were identified in the sub-basement, basement, first floor, second floor, third floor, fourth floor, fifth floor, sixth floor, and the roof of the heating plant building, as described below.

Table 3-25 ACM at West Heating Plant.

Floor	Mechanical System or Room/Location	Material Description	Friability	Estimated Quantity
Second Floor	Throughout	Pipe insulation and mudded pipe fitting insulation	Friable	1,750 LF
Second Floor	West Office	Tan Floor Tile Under Carpet	Category 1; non-friable	500 SF
Second and Third	Boiler #1	Boiler Brick Mortar	Category 2, non-	5,750 SF

Floor	Mechanical System or Room/Location	Material Description	Friability	Estimated Quantity
Floors			friable	
Second and Third Floors	Boiler #2	Boiler Brick Mortar	Category 2, non-friable	5,750 SF
Second and Third Floors	Boiler #3	Boiler Brick Mortar	Category 2, non-friable	5,750 SF
Second and Third Floors	Boiler #4	Boiler Brick Mortar	Category 2, non-friable	5,750 SF
Second and Third Floors	Boiler #5	Boiler Brick Mortar	Category 2, non-friable	5,750 SF
Second Floor	Flash Tank	Tank insulation	Friable	350 SF
Third Floor	Throughout	Pipe insulation and mudded pipe fitting insulation	Friable	1,500 LF
Third Floor	Boiler #1	Steam Drum insulation	Friable	1,500 LF
Third Floor	Boiler #2	Steam Drum insulation	Friable	500 SF
Third Floor	Boiler #3	Steam Drum insulation	Friable	500 SF
Third Floor	Boiler #4	Steam Drum insulation	Friable	500 SF
Third Floor	Boiler #5	Steam Drum insulation	Friable	500 LF
Fourth Floor	Throughout	Pipe insulation and mudded pipe fitting insulation	Friable	2,000 LF
Fourth Floor	Electrician's shop	12 inch by 12 inch brown floor tile	Category 1, non-friable	100 SF
Fifth Floor	Skip hoist	Brake shoes	Friable	25 SF
Fifth Floor	Boiler #1	Baghouse boiler insulation	Friable	3,000 SF
Fifth Floor	Boiler #2	Baghouse boiler insulation	Friable	3,000 SF
Fifth Floor	Throughout	Pipe insulation and mudded pipe fitting insulation	Friable	750 LF
Sixth Floor	Throughout	Pipe insulation and mudded pipe fitting insulation	Friable	780 LF
Roof	Upper roof	Roof membrane	Category 1, non-friable	15,500 SF
Roof	Perimeter roof	Roof membrane	Category 1, non-friable	7,000 SF
Roof	Upper roof	Roof flashing	Category 1, non-friable	575 SF
Roof	Perimeter roof	Roof flashing	Category 1, non-friable	630 SF

Fluorescent Light Ballast and Mercury Gauges

Based on a site inventory, approximately 750 light ballasts are estimated to exist in the facility. Light ballasts manufactured prior to 1979 could contain small quantities of PCBs. Ballasts produced between 1980 and 1991 may contain di-ethyl hexyl phthalate, which is classified as a potential carcinogen by the USEPA.

Mercury containing gauges were identified throughout much of the site; these gauges contain liquid mercury.

Other Regulated Materials

As part of the Phase II ESA, the interior of the building and previously used items were inventoried that would require proper disposal procedures. These items included pressurized gas cylinders, a pallet of lime, expired fire extinguishers, miscellaneous aerosol containers, and laboratory chemicals and testing kits.

3.10.2 What Are the Impacts to Hazardous Materials and Waste/Public Health and Safety Assessed?

No-Action Alternative

Under the No-Action Alternative, GSA would not dispose of the West Heating Plant parcel; therefore, the No-Action Alternative would result in no changes to existing hazardous materials and wastes and public health and safety.

Disposal Alternative – Direct Impacts

There would be no direct impacts to hazardous materials and wastes/public health and safety from disposal of the West Heating Plant parcel.

Disposal Alternative – Indirect Impacts

There could be indirect impacts from future redevelopment of the site. Although a reasonably foreseeable development scenario has been identified earlier in Chapter 3, the specifics of what will actually be developed on the site are unknown at this time. A Human Health and Risk Assessment was completed in 2011, and the study concluded that there were no unacceptable risks identified for any of the on-site or off-site populations considered with regard to analytes found in soil and groundwater samples during the Phase II ESA.

Once the disposal process has been completed, the developer would be required to comply with all Federal, state, and local laws and regulations with regard to handling and disposal of hazardous substances with regard to any future development on the property.

The Phase II ESA provides the following recommendations, and the developer would adhere to these recommendations for any potential redevelopment of the site, thereby minimizing any indirect impacts from the Disposal Alternative:

Subsurface Investigations

Additional risk assessment should be performed to evaluate the identified contaminants. District of Columbia Municipal Regulations Title 21 1155.13 indicates that concentrations exceeding criterion values must be reported to the Director in writing within 30 days. The ESA recommends submitting the Phase II ESA to the DDOE, for review and comment; additional risk assessment may be required by the District agency to evaluate the identified contaminants in the soil and groundwater on the West Heating Plant parcel. GSA submitted the Phase II ESA to the D.C. Department of Health (the agency that used to house the hazardous materials program before DDOE) on August 23, 2010.

Site Sumps

Based on the results of the Phase II ESA, additional sediment characterization is recommended. Based on the contaminants within the basement floor drain, which ultimately contributes flow to the sanitary sewer, all sumps and holding tanks should be cleaned and the waste properly handled.

Transformers

Characterization of the PCBs has been recommended to further evaluate a remedial plan. Upon completion of the characterization, and prior to moving forward with remedial activity, the developer would notify USEPA and DDOE. The notice must include a characterization report of the contamination and include a work plan for the remedial activity. Historical wipe sampling results indicate less than 10µg/100 cm^2 PCBs across areas of the site. If a change in building use were to occur, the previous results should be reviewed to determine if the residual concentrations are acceptable for the planned use. In the event that any transformers were to be removed from the facility, they would need to be handled and disposed of in accordance with applicable regulations. During any demolition work at this facility care should be used during removal of any electrical, hydraulic, or other similar equipment to screen for the presence of potential PCB containing items that may not have been identified during the Phase II ESA.

Lead Based Paint

Due to the presence of lead based paint within the heating plant building and the poor condition of it, the paint should be removed or remediated according to required laws and regulations.

Above Ground Storage Tanks

Inspection results identified the need for emergency venting of the 2,000 gallon tank. Recommendations were also made to confirm that the facility has a proper operational permit for the use of the above ground storage tanks, and that the facility should adhere to the SPCC plan.

Recommendations were made to drain tanks and piping that are not in use, and to valve shut piping extending from the tanks since they are no longer in use.

Asbestos-containing Materials

Due to the presence of ACM throughout the heating plant building, prior to any redevelopment, ACMs will need removal by a licensed asbestos abatement contractor.

Fluorescent Light Ballast and Mercury Gauges

If removed, all light ballasts should be properly recycled. A process would be developed for properly removing mercury containing gauges.

Other Regulated Materials

An inventory list was compiled of items identified throughout the heating plant building for disposal; these items should be properly disposed of according to required laws and regulations.

Underground Steam Tunnels

As mentioned previously, conveyance of the underground steam tunnels adjacent to the West Heating Plant are not part of the proposed action. Nevertheless, the developer would be required to cap the tunnels and coordinate with the District of Columbia during this process. There are no asbestos-containing materials in the tunnels.

Best Management Practices and Review Processes

The developer would be required to coordinate with USEPA and DDOE, as described above, as well as comply with requirements set forth by these agencies to ensure protection from hazardous materials and ensure there are no public health and safety concerns prior to any development activities. These requirements could include implementing the recommendations set forth in the Phase II ESA, or others that are identified during the pre-development review process. GSA has followed all necessary requirements pertaining to hazardous materials and waste, including but not limited to CERCLA.

3.10.3 What Mitigation Measures Would be Taken to Reduce Impacts to Hazardous Materials and Waste/Public Health and Safety?

Mitigation measures would not be required for disposal of the West Heating Plant parcel. GSA would, however, notify potential bidders/buyers of the West Heating Plant parcel of the presence of hazardous materials on the site, as determined by the Phase II ESA and Human Health Risk Assessment conducted for the site. A deed restriction indicating that the Grantee (which term includes Grantee's successors and assigns) is prohibited from using the groundwater located below the surface of the property would be established by GSA, as described in detail in Appendix F. Furthermore, ownership of the groundwater is being retained by the Government.

Should the Grantee desire to undertake a cleanup of the groundwater to allow for use of said groundwater, or to establish that a restriction on use is no longer necessary (in whole or in part) it will seek permission from Federal and District of Columbia regulators to undertake such an action or study. Should permission for such an undertaking be granted, upon completion of the proposed action by the Grantee that is satisfactory to the Government, such restrictions would be lifted or modified and the groundwater interests (in whole or in part) would be conveyed to the Bidder. Based on the results from the Phase II and HHRA, GSA has developed language for the property transfer with regard to hazardous materials (see Appendix F).

3.11 CUMULATIVE IMPACTS

3.11.1 Introduction

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in considering cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographical and temporal overlaps among the proposed actions and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between the proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated.

To identify cumulative effects, three fundamental questions need to be addressed:

- Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, there are very few other projects that have occurred, are presently occurring, or would occur in the near future that have the potential to interact with the proposed action and result in cumulative impacts. Only traffic and water resources have the potential for cumulative impacts, as described below.

3.11.2 What are the Relevant Past, Present, and Reasonably Foreseeable Projects in the Project Vicinity?

Transportation Projects

The No-Action Alternative trip generation described in Section 3.5 identifies two nearby projects that are expected to be completed by 2017. The trip generation estimates are included in the analysis of the No-Action Alternative as well as the Disposal Alternative.

The NPS is in the process of preparing an EA that evaluates a range of feasible alternatives and strategies for the rehabilitation and reconstruction of Rock Creek and Potomac Parkways southbound at Waterside Drive in the District of Columbia. The NPS, in cooperation with the Federal Highway Administration (FHWA), proposes a combination of road safety improvements where the southbound ramp from Waterside Drive merges onto Rock Creek and Potomac Parkway, in Washington, DC.

3.11.3 What are the Cumulative Impacts?

Traffic

The cumulative impacts for the disposal alternative are included in the analysis, built upon the new projects identified in Section 3.5. The NPS project involving safety improvements for Rock Creek and Potomac Parkways would not result in cumulative impacts in combination with the proposed action as no trips were generated from the reasonably foreseeable development scenario that would use the ramps serving Rock Creek and Potomac Parkways from K Street, NW.

Water Resources

As described in earlier sections of Chapter 3, Rock Creek and the C&O Canal are considered impaired waterways. Past development activities and land uses in the watersheds have contributed to poor water quality. The proposed action would not directly impact water quality, but there could be secondary impacts from future redevelopment of the West Heating Plant parcel. The future developer would be required to obtain appropriate permits in compliance with the Clean Water Act and District of Columbia regulations as well as implement best management practices to reduce stormwater runoff. The action alternative when added to other past, present, and reasonably foreseeable future projects would contribute a negligible incremental effect to the overall cumulative effect given the small size of the project area when compared to the larger Potomac River Basin and Rock Creek Watershed.

3.11.4 What are the Irreversible and Irretrievable Commitment of Natural and Depletable Resources?

NEPA requires that environmental analysis include identification of "…any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of

non-renewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site).

Implementation of this action, as a result of indirect impacts, would result in a minor increase in fuels used by ground-based vehicles, particularly during site redevelopment. Therefore, minor amounts of these nonrenewable resources would be irretrievably lost or depleted.

3.11.5 What is the Relationship Between Local Short-Term Use of the Environment and Long-Term Productivity?

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and of the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development option reduces future flexibility in pursuing other options, or that giving over a parcel of land or other resource to a certain use eliminates the possibility of other uses being performed at the site.

The Disposal Alternative would take place within an area of DC that is already developed. No unique habitat or ecosystems would be lost due to this action. Implementation of the proposed action or No-Action Alternative would not result in any impacts that would reduce environmental productivity, permanently narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the general welfare of the public.

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